DRAINAGE NOTES:

1. All water to slope away from structures at 5% within the first ten (10) feet and drainage swales to slope at 5% along grass and landscaped surfaces and at 2% along impervious concrete surfaces. Impervious surfaces within ten feet of a building foundation shall be sloped not less than 2% away from the building.
2. The maximum amount of soil being moved (cut or fill) shall be less than 50 cubic yards.
3. Roof downspouts shall be directed to approved splash guard blocks a minimum of two (2) feet long and deflect away from buildings.
4. The permittee is responsible for dust control measures. Water active sites at least twice daily.
5. The locating and protection of all existing utilities is the responsibility of the permittee.
6. All existing drainage courses though the site shall remain open to handle the storm water, however, in any case, the permittee shall be held liable of any damage due to obstructing natural drainage patterns.
7. Approved erosion protection devices shall be provided and maintained during the rainy season and shall be in place at the end of each day's work.
8. Construction sites shall be maintained in such a condition that an anticipated storm does not carry wastes or pollutants of the sites.
9. Discharges of material other than storm water are allowed only when necessary for performance and completion of construction practices and where they do not: cause or contribute to a violation of any water quality standard, cause or threaten to cause pollution, contamination or nuisance, or contain a hazardous substance in a quantity reportable under Federal Regulations 40 CFR 117 and 302.
10. Potential pollutants include but are not limited to: solid or liquids chemical spills, wastes prom paints, stains, sealants, glues, limes, pesticides, herbicides, wood preservatives and solvents, asbestos fibers, paint flakes, or stucco fragments, fuels, oils, lubricants, and hydraulic radiator or battery fluids, fertilizers, vehicles/equipment wash water and concrete wash water, concrete, detergent or floatable wastes, wastes from any engine/equipment steam cleaning or chemical degreasing, and super chlorinated potable water line flushing.
11. During construction, disposal of such materials should occur in a specified and controlled temporary area on-site, physically separated from potential storm water run-off, with ultimate disposal in accordance with local, state, and federal requirements. All dirt, sand, mud or debris deposited or spilled upon public streets during any grading, hauling, or export operations shall be immediately cleaned up by the developer, his Contractor, Subcontractors, or agents to the satisfaction of the City Engineer. Failure to do so will be cause for stopping all such grading, hauling, or export work by the City until such time as the streets are cleaned.
12. Contractor is responsible for the repair of all damages to public properties that are caused by the work on-site. Repair must be completed to the satisfaction of the City Engineer.

VICINITY MAP

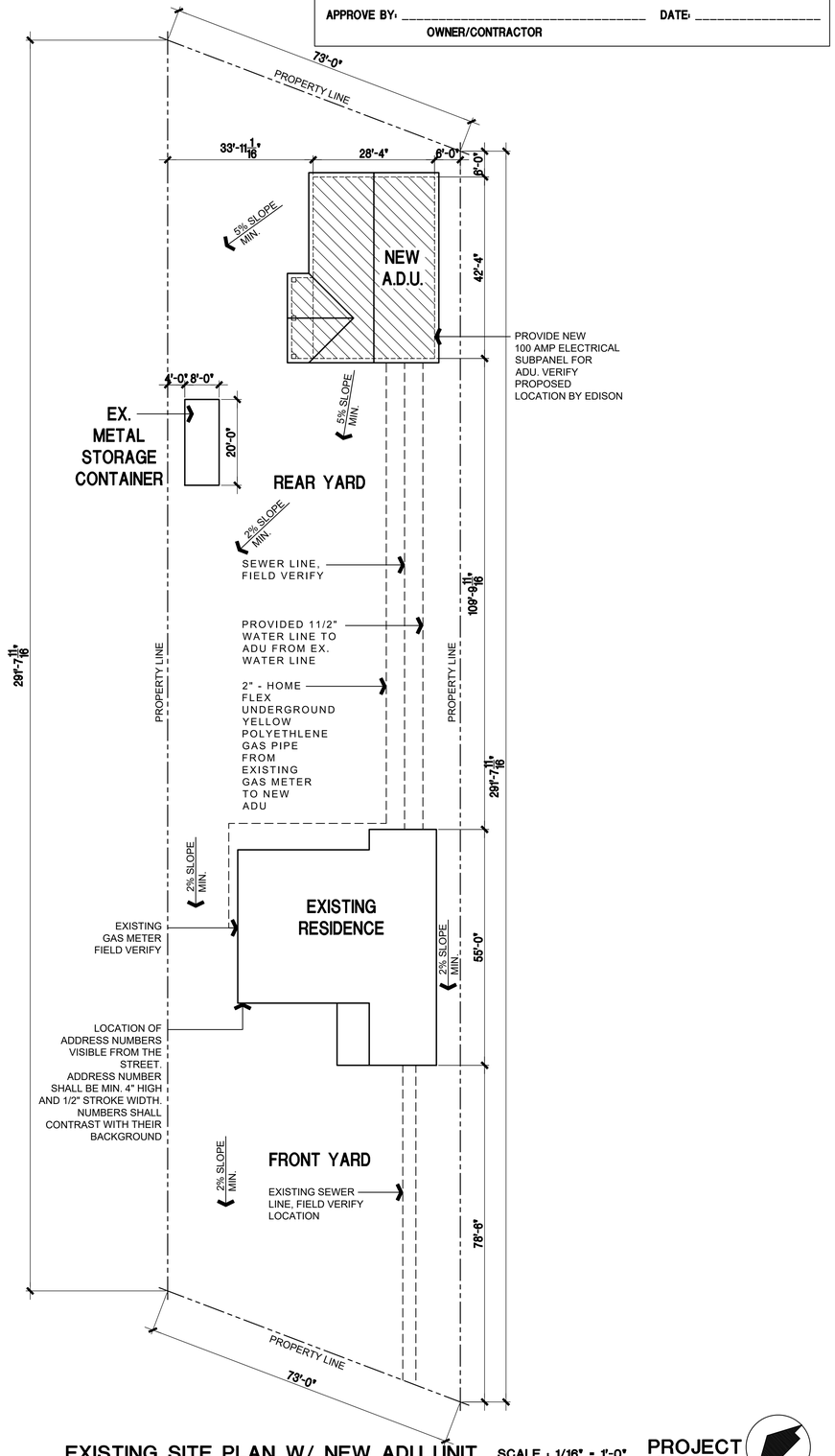
SCALE : NTS

DIG ALERT (811)

1. DIG ALERT (811) IS TO BE CONTACTED AND THAT COMPLIANCE WITH EXCAVATION SAFETY IN ACCORDANCE WITH GOVERNMENT CODE 4216 WILL BE FOLLOWED PRIOR TO ANY EXCAVATION TAKING PLACE.

APPROVE BY: _____ DATE: _____

OWNER/CONTRACTOR



EXISTING SITE PLAN W/ NEW ADU UNIT SCALE : 1/16" = 1'-0"

PROJECT NORTH

GENERAL NOTES

1. ALL WORK TO BE DONE PER:
   2022 CALIFORNIA RESIDENTIAL CODE (CRC)
   2022 CALIFORNIA BUILDING CODE (CBC)
   2022 CALIFORNIA ELECTRICAL CODE (CEC)
   2022 CALIFORNIA MECHANICAL CODE (CMC)
   2022 CALIFORNIA PLUMBING CODE (CPC)
   2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBS)
   2022 CALIFORNIA ENERGY CODE (CEnC)
2. OCCUPANCY TYPE: R3/U
   CONSTRUCTION TYPE: V-B
3. IT IS THE CLIENTS RESPONSIBILITY TO NOTIFY THE DESIGNER IN WRITING PRIOR OR DURING CONSTRUCTION OF ANY ERRORS IN THE PLANS AND SPECIFICATIONS OF WHICH A CONTRACTOR THOROUGHLY KNOWLEDGEABLE WITH THE BUILDING CODE AND METHODS OF CONSTRUCTION SHOULD REASONABLY BE AWARE. WRITTEN INSTRUCTIONS ADDRESSING SUCH ERRORS SHALL BE RECEIVED FROM THE DESIGNER PRIOR TO PROCEEDING THE WORK.
4. THESE PLANS ARE FOR GENERAL CONSTRUCTION PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SELECT VERIFY, RESOLVE AND INSTALL ALL MATERIALS AND EQUIPMENT. THE ARCHITECT AND ENGINEER SHALL NOT BE OBSERVING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION OF THIS PROJECT.
5. FIELD VERIFY EXISTING UTILITIES AND PROTECT FROM DAMAGE AND ALL CONDITIONS. FIELD VERIFY THE LOCATION OF UTILITIES SUCH AS WATER, SEWER, GAS AND ELECTRICAL CONNECT TO THESE AS BEST AS POSSIBLE. CALL S.C.E. FOR ELECTRICAL AND THE GAS COMPANY IF NEEDED TO LOCATE UTILITIES.
6. MAXIMUM FLOW RATE STANDARDS SET BY THE CPC:
   A. WATER CLOSETS: 1.28 G/FLUSH
   B. SHOWERHEADS: 1.8 GPM @ 80 PSI
   C. FAUCETS: 1.2 GPM @ 60 PSI
   D. KITCHEN FAUCETS: 1.8 GPM @ 80 PSI
7. PLUMBING, MECHANICAL AND ELECTRICAL ARE SUBJECT TO FIELD INSPECTION.
7. MAIN HOUSE IS NON-SPRINKLERED
8a. Asbestos Exposure Assessment [CCR, Title 8, 1529(f)(2)(A)]. Where applicable for construction, alteration, painting, repairing, construction maintenance, renovation, removal, or wrecking of any fixed structure or its parts as identified in 1502, an asbestos assessment shall be conducted by a ôcompetent personö certified in the State of California to do so, and where necessary, shall provide recommendations to abate any asbestos prior to any of the above work.
8b. SCAQMD Notification [SCAQMD Rule 1403]. Where asbestos related work is required, prior to any asbestos related work SCAQMD shall be notified as required by, and in compliance with, SCAQMD Rule 1403.
8c. Waste Management Program for Demolition and Construction Debris [CRC R334, CBC 420.11] Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with CGBSC 4.408.
9. Street Address. Specify--The numeric street address that contrasts with the background shall be place in a position that is visible from the street. Each character shall be at least 4-inches in height and shall have a minimum stroke within of ½-inch.

SITE PLAN TABULATION

EX. HOUSE	1,959 S.F.
NEW ADU	1,199 S.F.
TOTAL	3,158 S.F.
NEW ADU PORCH	94 S.F.
EX. MAIN HOUSE PORCH	109 S.F.

LOT AREA 17,424 S.F.
TOTAL AREA OF EX. HOUSE & NEW ADU = 3,158 S.F.
LOT COVERAGE 3,158 S.F./17,424 S.F. = 18.1%

PROJECT DATA:

APN#: 154330007
EXISTING DWELLING: NON SPRINKLERED
NEW ADU: NON SPRINKLERED
EXISTING MAIN HOUSE HEIGHT: ±15'-0"

PROJECT DESCRIPTION:

1. NEW ADU UNIT AT REAR YARD:
   -THREE BEDROOMS
   -TWO BATHS
   -KITCHEN/DINING
   -LIVING ROOOM

DEFERRED SUBMITTALS:

1. PHOTOVOLTAIC SYSTEM UNDER SEPARATE PERMIT
   PROVIDE MINIMUM 2.02 KWdc PHOTOVOLTAIC SYSTEM

SHEET INDEX

PROJECT DIRECTORY

OWNER: GABRIEL & MARISA OROZCO
6625 GAYLORD ST
RIVERSIDE, CA 92505

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ALHAMBRA, CA 91803
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Email: gplanos@sbcglobal.net

02-03-2025

GABRIEL & MARISA OROZCO
6625 GAYLORD ST
RIVERSIDE, CA 92505

SHEET
A1

ELECTRICAL NOTES:

1.PROVIDE AFCI/GFI OUTLETS IN BATHROOM AND IN KITCHEN COUNTERTOP.
2.ALL OUTLETS SHALL BE ARC FAULT PROTECTED AND TAMPER RESISTANCE PER ELECTRICAL CODE.
3. FIELD VERIFY BEST LOCATION OF LIGHTING.
4. SMOKE ALARMS SHALL RECEIVE INTERCONNECTED HARDWIRE WITH BATTERY BACKUP AND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA72.
5.SMOKE ALARMS SHALL BE TESTED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS, SMOKE ALARM SHALL BE REPLACED AFTER 10 YEARS FROM THE DATE OF MANUFACTURED MARKED ON THE UNIT. SMOKE ALARM SHALL BE INTERCONNECTED SUCH THAT THE ACTIVATION OF ONE ALARM ACTIVATE ALL ALARMS IN THE INDIVIDUAL DWELLING UNIT.
6. CARBON MONOXIDE SHALL RECEIVE INTERCONNECTED HARDWIRE WITH BATTERY BACKUP AND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA72. CARBON MONOXIDE.
7. CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 2034.
8.CARBON MONOXIDE DETECTOR SHALL BE LISTED IN ACCORDANCE WITH UL 2075.
9.CARBON MONOXIDE ALARMS SHALL BE INTERCONNECTED SUCH THAT THE ACTIVATION ON ONE ALARM WILL ACTIVATE ALL ALARMS IN THE INDIVIDUAL DWELLING UNIT.
10.CONVENTIONAL LIONIZATION SMOKE ALARMS THAT ARE SOLELY POWERED BATTERY SHALL BE EQUIPPED WITH A 10 YEAR BATTERY AND HAVE A SILENCE FEATURE.
11. FANS SHALL BE ENERGY STAR COMPLIANT AND SHALL BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
12. HUMIDISTAT CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF 50 TO 80 PERCENT.
13. ALL BRANCH CIRCUITS SUPPLYING RECEPTACLES IN RESIDENCE, EXCEPT BATHROOM AND GARAGE, SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER (AFC).
14. LIGHTNING MEASURES:
A. LIGHTNING IN BATHROOMS, ALL LUMINARIES SHALL BE HIGH EFFICACY AND SHALL BE CONTROLLED BY A VACANCY SENSOR.
B. OTHER ROOMS. ALL LUMINARIES SHALL BE HIGH EFFICACY AND SHALL BE CONTROLLED BY A VACANCY SENSOR OR DIMMER. CLOSETS THAT ARE LESS THAN 70 SQUARE FOOT ARE EXEMPT FROM THIS REQUIREMENT.
C. OUTDOOR LIGHTNING. ALL LUMINARIES MOUNTED TO THE BUILDING OR TO THE OTHER BUILDINGS ON THE SAME LOT SHALL BE HIGH EFFICACY LUMINARIES AND SHALL BE CONTROLLED BY A PHOTO CONTROL/ MOTION SENSOR COMBINATION (WITH OVERRIDE).
15. HIGH EFFICACY LUMINARIES MUST BE PIN BASED.
16.EXHAUST FANS SHALL BE SWITCHED SEPARATELY FROM LIGHTING SYSTEM.
17.ALL LIGHTENING SHALL BE LED AND ON A DIMMER OR VACANCY SENSOR.
18. IN ADDITION TO THE LOCAL EXHAUST FANS IN THE BATHROOMS AND KITCHENS, AN EXHAUST SHALL BE SIZED TO PROVIDE VENTILATION FOR THE WHOLE HOUSE. THE MINIMUM VENTILATION RATE FOR THE WHOLE-BUILDING EXHAUST FAN SHALL BE CALCULATED ACCORDING TO ASHRAE STANDARD 62.2 EQUATION 4.1(A). THE CONDITIONED FLOOR AREA AND THE NUMBER OF BEDROOMS IN THE HOME (THE EXISTING HOME AND THE ADDITION) WILL DETERMINE THE MINIMUM VENTILATION RATE. ONE OF THE LOCAL EXHAUST FAN MEETS THE MINIMUM VENTILATION RATED FOR BOTH OF LOCAL EXHAUST AND WHOLE-BUILDING VENTILATION REQUIREMENTS. THE DUCTING FOR THE WHOLE BUILDING EXHAUST FAN SHALL BE SIZED ACCORDING TO ASHRAE STANDARD 62.2 TABLE 7.1 AND THIS EXHAUST FAN SHALL OPERATE CONTINUOUSLY. IDENTIFY FAN MANUFACTURER, MODEL AND SOUNDS RATING (1 SONE FOR CONTINUOUS MAY BE SONE FOR INTERMITTENT) ON PLANS.
19. THE WHOLE BUILDING VENTILATION EXHAUST FAN WILL OPERATE CONTINUOUSLY AND IS REQUIRED TO BE RATED FOR SOUND AT A MAXIMUM OF 1 SONE. THIS EXHAUST CAN BE CONTROLLED BY STANDARD ON/OFF SWITCH BUT THE SWITCH MUST BE LABELED TO INFORM THE OCCUPANT THAT THE EXHAUST FAN IS THE WHOLE BUILDING VENTILATION. EXHAUST FAN AND IS INTENDED TO OPERATE CONTINUOUSLY. NO SPECIFIC WORDING IS MANDATED, BUT THE WORDINGS NEEDS TO BE CLEAR WHAT THE CONTROL IS FOR AND THE IMPORTANCE OF OPERATING THE SYSTEM. THIS MAY BE A SIMPLE AS "VENTILATION CONTROL" OR MIGHT INCLUDE THE WORDING SUCH AS: OPERATE WHEN HOUSE IS IN USE" OR "KEEP ON EXCEPT WHEN GONE OVER 7 DAYS" OR " FAN IS TO BE LEFT ON TO ENSURE INDOOR AIR QUALITY".
20. ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROL HEIGHTS INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48", MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15" MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THIS FINISH FLOOR. REFER TO CRC R327.1.2 FOR EXCEPTIONS.
21. DOORBELLS BUTTONS OR CONTROLS SHALL NOT EXCEED 48" ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY.
22. ALL 125-VOLT THROUGH 250-VOLT RECEPTACLES SHALL BE GFI PROTECTED AT REQUIRED LOCATIONS
23. ALL SERVICES SUPPLYING DWELLING UNITS SHALL BE PROVIDED WITH A SURGE-PROTECTION DEVICE (SPD) AS AN INTEGRAL PART OF THE SERVICE EQUIPMENT, OR IMMEDIATELY ADJACENT THERETO. SPECIFICALLY INCLUDES SERVICE EQUIPMENT REPLACEMENTS AND UPGRADES. CEC 230.67
24. BATHROOM OUTLETS SHALL BE ON A DEDICATED 20 AMP CIRCUIT

WATER HEATING NOTES:

1. INDICATE ON PLANS "PER SECTION 301.1.1 CAL GREEN AND CIVIL CODE 1101.3(C), ALL NON COMPLIANT PLUMBING FIXTURES WITHIN THIS RESIDENCE SHALL BE REPLACED WITH WATER-CONSERVING PLUMBING FIXTURES". BUILDING FINALED ON OR AFTER 01/01/94 ARE EXEMPT FROM THIS REQUIREMENT. (NOTE TO PCER: THIS DO NOT APPLY FOR REPAIRS).
2. WATER HEATING. SYSTEMS USING GAS OR PROPANE WATER HEATERS TO SERVE INDIVIDUAL DWELLING UNITS SHALL INCLUDE THE FOLLOWING COMPONENTS [150.0(N)]:
A. A DEDICATED 125V, 20A (20 AWG COPPER BRANCH CIRCUIT)
ELECTRICAL RECEPTACLE THAT IS WITHIN 3 FEET FROM WATER HEATER AND ACCESSIBLE TO THE WATER HEATER WITH NO OBSTRUCTIONS. THERE SHALL BE A RESERVED SINGLE POLE BREAKER SPACE IN THE ELECTRICAL PANEL LABELED "FUTURE 240V USE".
B. A CATEGORY III OR IV VENT OR TYPE B VENT WITH STRAIGHT PIPE BETWEEN THE OUTSIDE TERMINATION AND THE SPACE WHERE THE WATER HEATER IS INSTALLED.
C. A CONDENSATE DRAIN THAT IS NO MORE THAT 2 INCHES HIGHER HIGHER THAN THE BASE OF THE INSTALLED WATER HEATER, AND ALLOWS NATURAL DRAINING WITHOUT PUMP ASSISTANCE.
D. A GAS SUPPLY LINE WITH CAPACITY OF AT LEAST 200,000 BTU/HR. PROVIDE ISOMETRIC TO SHOW COMPLIANCE.
3. A. HPWH WILL BE INSTALLED ACCORDING TO MANUFACTURER'S REQUIREMENTS
B. INSTALLATION SHALL BE IN A CONDITIONED SPACE UNLESS LISTED FOR EXTERIOR INSTALLATION. MODELING IN T-24 MUST MATCH
C. PRESCRIPTIVE INSTALLATIONS SHALL BE INDOORS AND ON A RIGID R-10 INSULATED SURFACE. HPWH MUST MEEET NEEA TIER 3 OR HIGHER. [150.2(b)1Hiii]

ENERGY NOTES:

1. THIS BUILDING SHALL BE ENERGY STORAGE SYSTEM (ESS) READY (150.0(S)):
A. AT LEAST ONE SHALL BE PROVIDED:
I) INTERCONNECTION EQUIPMENT WITH A MINIMUM BACKED-UP OF 60 AMPS AND MIN OF 4 ESSSUPPLIED BRANCH CIRCUITS, OR
II) A MINIMUM 1 INCH DEDICATED RACEWAY FROM MAIN SERVICE TO SUBPANEL THAT SUPPLIES THE BRANCH CIRCUITS IN ITEM 2 PANEL SHALL BE LABELED.
B. IDENTIFY AT LEAST 4 BRANCH CIRCUITS IN THE ESS SUBPANEL: SUPPLY REFRIGERATOR, LIGHTING NEAR FRONT DOOR, AND MINIMUM 1 FOR SLEEPING ROOM OUTLETS.
C. **MAIN PANELBOARD MINIMUM BUSBAR RATING OF 225 AMPS (150.0(S))**
D. RESERVE SPACE WITHIN 3 FEET OF THE MAIN PANEL TO ALLOW FUTURE INSTALLATION OF ISOLATION EQUIPMENT/TRANSFER SWITCH. RACEWAY INSTALLED BETWEEN THE PANEL AND SWITCH TO ALLOW BACKUP POWER SOURCE CONNECTION.
2. THIS BUILDING SHALL BE HEAT PUMP SPACE HEATER READY (150.0(T)):
A. A DEDICATED 240V, 30A BRANCH CIRCUIT WITH TERMINATION 3 FEET FROM FURNACE AND LABEL BLANK COVER.
B. RESERVE AND LABEL DOUBLE POLE BREAKER SPACE IN MAIN PANEL AND MARK.
3.THIS BUILDING SHALL BE ELECTRIC COOKTOP READY (150.0(U)):
A. A DEDICATED 240V, 50A BRANCH CIRCUIT WITH TERMINATION 3 FEET FROM COOKTOP AND LABEL BLANK COVER.
B. RESERVE AND LABEL DOUBLE POLE BREAKER SPACE IN MAIN PANEL AND MARK AS "FOR FUTURE 240v USE"
4.THIS BUILDING SHALL BE ELECTRIC CLOTHES DRYER READY (150.0(V)):
A. A DEDICATED 240V, 30A BRANCH CIRCUIT WITH TERMINATION 3 FEET FROM CLOTHES DRYER LOCATION AND LABEL BLANK COVER.
B. RESERVE AND LABEL DOUBLE POLE BREAKER SPACE IN MAIN PANEL AND MARK.
5. IF GAS OR PROPANE WATER HEATING SYSTEM IS USED, PROVIDE DESIGNATED SPACE FOR FUTURE HEAT PUMP WATER HEATER AT LEAST 2.5 FEET BY 2.5 FEET AND 7 FEET TALL. **SHOW THE DESIGNATED SPACE AND MEASUREMENT TO THE WATER HEATER ON PLAN.**
6.IF GAS OR PROPANE WATER HEATING SYSTEM IS USED, PROVIDE DESIGNATED SPACE FOR FUTURE HEAT PUMP WATER HEATER AT LEAST 2.5 FEET BY 2.5 FEET AND 7 FEET TALL: (150.0(N))
A. IF WITHIN 3 FEET OF WATER HEATER:
I) A DEDICATED 125V, 20A ELECTRICAL RECEPTACLE WITH 120/240V 3 CONDUCTOR, 10 AWG COPBRANCH CIRCUIT, WITHIN 3 FEET AND ACCESSIBLE FROM THE WATER HEATER.
II) RESERVE AND LABEL SINGLE POLE BREAKER IN MAIN PANEL.
B. IF MORE THAN 3 FEET FROM WATER HEATER:
I) A DEDICATED 240V, 30A BRANCH CIRCUIT WITH TERMINATION 3 FEET FROM DESIGNATED SPACE AND LABEL BLANK COVER.
II) RESERVE AND LABEL DOUBLE POLE BREAKER SPACE IN MAIN PANEL AND MARK.
III) WATER LINES, BOTH HOT AND COLD, ROUTE THROUGH DESIGNATED SPACE BEFORE REACHING GAS OR PROPANE WATER HEATER.
IV) ROUTE HOT WATER PIPE TO THE DESIGNATED SPACE BEFORE SERVING ANY FIXTURE.
V) EXPOSE HOT AND COLD WATER PIPING AND ACCESSIBLE AT THE DESIGNATED SPACE.
VI) A 2 INCH HIGH MAXIMUM CONDENSATE DRAIN HIGHER THAN THE BASE OF THE INSTALLED WATER HEATER.

QuietCool
ADVANCED WHOLE HOUSE FANS™

QC STL PRO-1.5X Specifications

Air Flow	1,479 CFM
HVI-916 Airflow (for CA Title 24 New Construction)	1,040 CFM
Recommended SQFT Coverage @ 2-3 CFM per SQFT	Covers 439 SQFT to 739 SQFT
Energy Use	66.7 Watts
Amps	0.9
Motor Voltage	120 VAC, 60 Hz
# of Speeds	1
dBA	37.2
Minimum Attic Clearance	32"
Duct Diameter	14"
Duct Length	6 feet
Motor Head Diameter	14 1/2"
Motor Head Length	13 1/2"
Dampers	Barometric Pressurized RS Dampers
Controls (Sold Separately)	Included: 8 Hr Electronic Timer Optional: IT-36002 QuietCool RF Wireless Control Kit
Warranty	15 Years
Framing	None Required
Joist Cutting	None Required; fits 16" or 24" on center
Minimum Suggested Attic Venting	1:98 SQ.FT net free area
Ceiling Rough Opening	14 1/4" x 14 1/4"
Removable Grille Outside Dimension	16" x 16"
Shipping Weight	43 lbs.
Box Dimensions	20" x 20" x 38"
In The Box	-QC STL PRO-1.5X Motorhead -Ceiling Grille -Cut-out Template -Window Locks -Damper Box -6 Foot Duct -Accessory Bag -Controls

For more information, visit our website at:
QUIETCOOLSYSTEMS.COM

ELECTRICAL LEGEND

	110 OUTLET AFCI
	GFCI/AFCI DUPLEX
	GFCI WATERPROOF
	240 V OUTLET
3	SWITCH
	SWITCH (3-WAY)
OS	SWITCH (OCCUPANCY SENSOR)
D	SWITCH (DIMMER)
MS	SWITCH (MOTION SENSOR)
	CEILING MOUNTED LED LIGHT FIXTURE
	WALL MOUNTED LED LIGHT
	COMBINATION OF EXHAUST FAN & LED LIGHT. 50 CMF MIN.
P.B.	PUSHBUTTON
S	110V SMOKE DETECTOR TO SOUND ALARM AUDIBLE IN ALL SLEEPING AREAS BE HARDWIRED WITH BATTERY BACKUP
S/C	COMBINATION CARBON MONOXIDE/SMOKE DETECTOR TO SOUND ALARM AUDIBLE IN ALL SLEEPING AREAS. HARDWIRE WITH BATTERY BACKUP
F.G.	FUEL GAS
	CHIMES
CW	COLD WATER
HW	HOT WATER
	WHOLE BUILDING VENTILATION FAN. SIZE AND DUCTED PER ASHRAE 62.2-2007. 1 SONE MAX. SEE CF-1R & MF-1R FOR ADDITIONAL INFO. (FAN IS SWITCHED SEPARTELY FROM THE LIGHTING. THE FAN CONTROL SHOULD BE ON AT ALL TIMES WHEN THE BUILDING IS OCCUPIED, UNLESS THERE IS SEVERE OUTDOOR AIR CONTAMINATION.)

WINDOW SCHEDULE

WINDOW NUMBER	SIZE WDTH.	SIZE HT.	TYPE	U-FACTOR	SHGC
1	4'-0"	4'-0"	NEW SLIDING	0.3	0.23
2	3'-0"	3'-0"	NEW SLIDING	0.3	0.23
3	5'-0"	4'-0"	NEW SLIDING	0.3	0.23

DOOR SCHEDULE

DOOR NUMBER	SIZE WDTH.	SIZE HT.	TYPE
1	3'-0"	6'-8"	SOLID CORE
2	2'-6"	6'-8"	HOLLOW CORE
3	2'-4"	6'-8"	HOLLOW CORE
4	4'-0"	6'-8"	BI-PASS
5	2'-8"	6'-8"	FOLDING LOUVERED
6	2'-4"	6'-8"	LOUVERED
7	2'-10"	6'-8"	HOLLOW CORE

WALL LEGEND

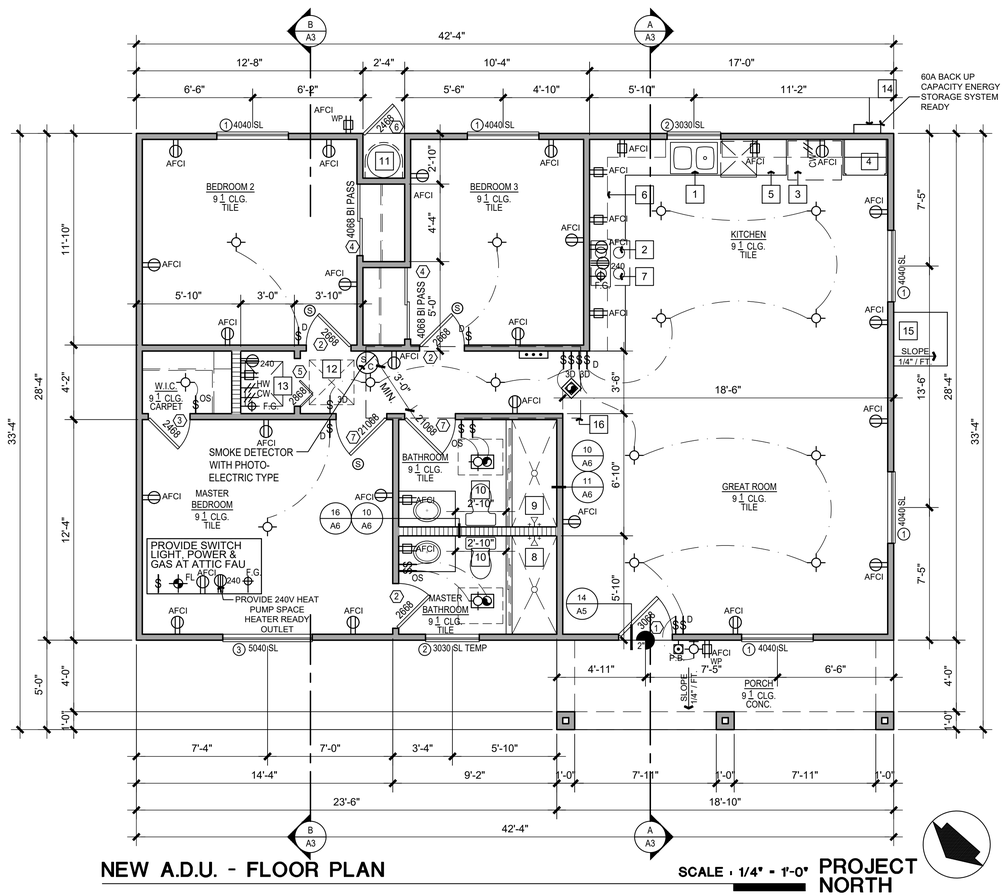
NEW 2X4 WOOD STUDS

NEW 2X6 WOOD STUDS

FLOOR PLAN KEY NOTES:

1. SINK W/ GARBAGE DISPOSAL - VERIFY DIM. W/ MFR. SPEC.
2. 30" RANGE & VENT HOOD (280 CFM) - PER OWNER'S SPECS.
3. 33" CLEAR REFRIGERATOR SPACE - PER OWNER'S SPECS.
4. 5 SHELVES, CABINET PANTRY - PER OWNER'S SPECS.
5. BASE CABINETS
6. UPPER CABINETS
7. EXHAUST HOOD OVER ELECTRIC RANGE W/ MIN. 130 CFM RO 55% CE FOR ELECTRIC RANGE OR 280 CFM OR 85% CE FOR NATURAL GAS RANGE.
8. 30"X66" SHOWER UNIT W/OPT. TEMP. GLASS ENCLOSURE DOOR AND PANELS MUST BE LABELED CATEGORY II. WALL COVERING SHALL BE CEMENT PLASTER TILE OR APPROVED EQUAL TO 72" ABOVE DRAIN.
9. 30"X78" SHOWER UNIT W/OPT. TEMP. GLASS ENCLOSURE DOOR AND PANELS MUST BE LABELED CATEGORY II. WALL COVERING SHALL BE CEMENT PLASTER TILE OR APPROVED EQUAL TO 72" ABOVE DRAIN.
10. WATER CLOSETS-PROVIDE A MIN. 30" CLR. WIDTH SPACE AND 24" IN FRONT OF WATER CLOSET W/ A MAX OF 128 GALLONS PER FLUSH
11. HIGH EFFICIENCY NEEA HEAT PUMP BY A.O. SMITH (MODEL: HPTS-50 2 (50 GAL, JA13)
12. 30" X 30" ATTIC ACCESS MIN. WITH 30" MIN CLEAR HEADROOM, FIELD VERIFY BEST LOCATION.
13. STACKED WASHER/DRYER, DRYER VENT THRU ROOF OR TO EXTERIOR WALLS AS REQUIRED (MIN. 4" DUCT.)
A) CLOTHES DRYER EXHAUST OUTLET MUST BE A MIN. OF 5' FROM CONDENSING UNITS.
B) PROVIDE CLOTHES DRYER MOISTURE EXHAUST DUCT (MIN. 4" DIA.) TO THE OUTSIDE AND EQUP WITH A BACK-DRAFT. EXHAUST DUCT LENGTH IS LIMITED TO 14 FT. WITH 2 ELBOWS.
14. 150 AMP ELECT. SUB PANEL, VERIFY BEST LOCATION
15. 36"X36"X3" CONCRETE PAD FOR AC CONDENSE
16. F.A.U. MUST BE WITHIN 20 FEET OF UNIT AND SHALL HAVE A CONTINUOUS SOLID WALKWAY AT LEAST 24 IN. WIDE, A SWITCH CONTROLLED LIGHT, 110 V OUTLET, COMBUSTION AIR, CONDENSATE DRAIN LINE AND VENT TO OUTSIDE AIR PER C.M.C. SECTION 307.3 AND CHAPTER 7. SEE SPECIFICATIONS AND DETAIL 17/A6

GAS ISOMETRIC SCALE : N.T.S.



NEW A.D.U. - FLOOR PLAN SCALE : 1/4" = 1'-0" PROJECT NORTH

PLANOS DRAFTING
•Design Drawings
•Construction Drawings
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Cell 714. 227.1189
Email: gplanos@sbcglobal.net

02-03-2025

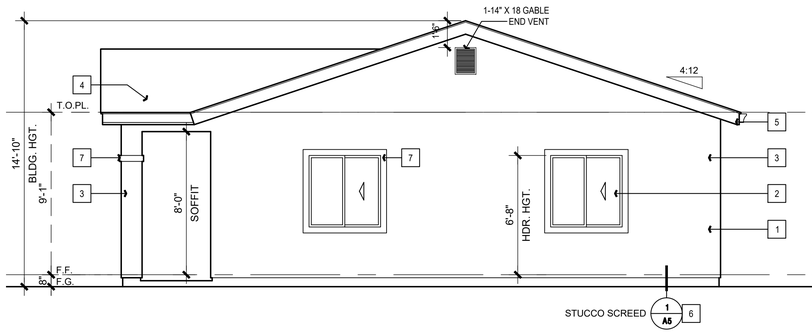
REGISTERED PROFESSIONAL ENGINEER GONZALO GARCIA OCHOA No. 36217 Exp. 9/30/23 CIVIL STATE OF CALIFORNIA

GABRIEL & MARISA OROZCO
6625 GAYLORD ST
RIVERSIDE, CA 92505

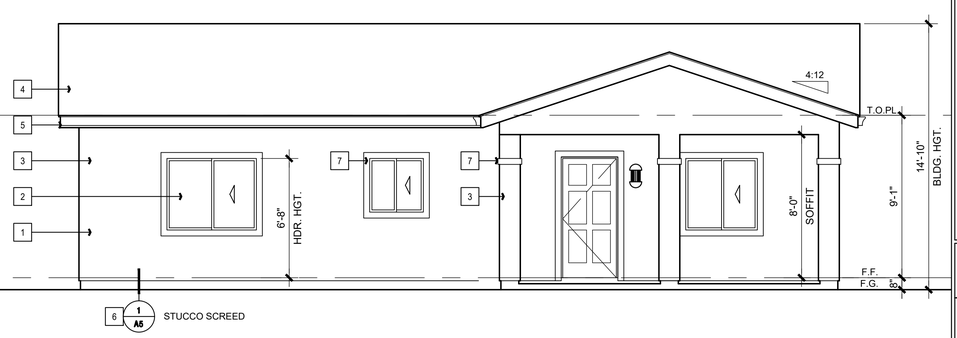
SHEET
A2

EXTERIOR FINISHES

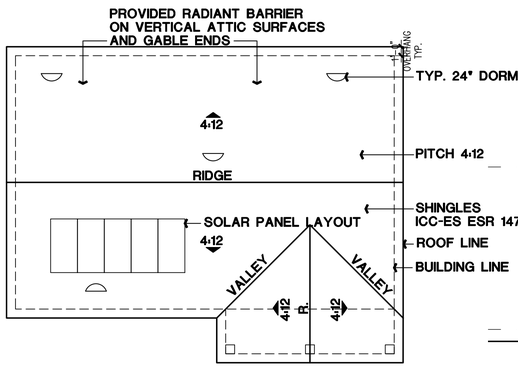
1. ALL EXT. FINISHES TO MATCH EXISTING HOUSE AS BEST AS POSSIBLE.
2. ALL WINDOWS/TRIM TO MATCH EXISTING HOUSE, WINDOWS TO BE VINYL.
3. 7/8" STUCCO 3/16 MIN. WATER RESISTIVE BARRIER OVER PLYWD. MATCH EXISTING HOUSE, COLOR & FINISH TO MATCH
4. ROOFING MATERIAL TO BE SHINGLES MIN. CLASS 'B', CAF TIMBERLINE COOL ROOF ASPHALT SINGLES ICC-ES ESR 1475 UL#790 OR APPROVED EQUAL WITH SOLAR REFLECTANCE OF 0.2, ROOF EMITTANCE OF 0.85 RADIAN BARRIER IS REQUIRED AT ROOF SHEATHING
5. 2X8 WOOD FASCIA BOARD.
6. STUCCO SCREED 4" ABOVE SOIL
7. STUCCO OVER 1X4 WOOD TRIM.



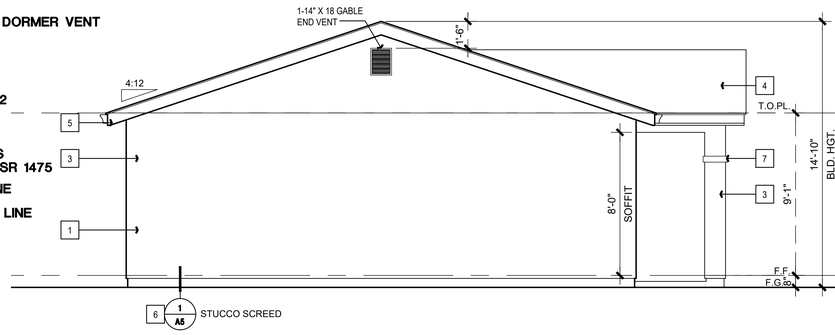
RIGHT SIDE ELEVATION SCALE : 1/4" = 1'-0"



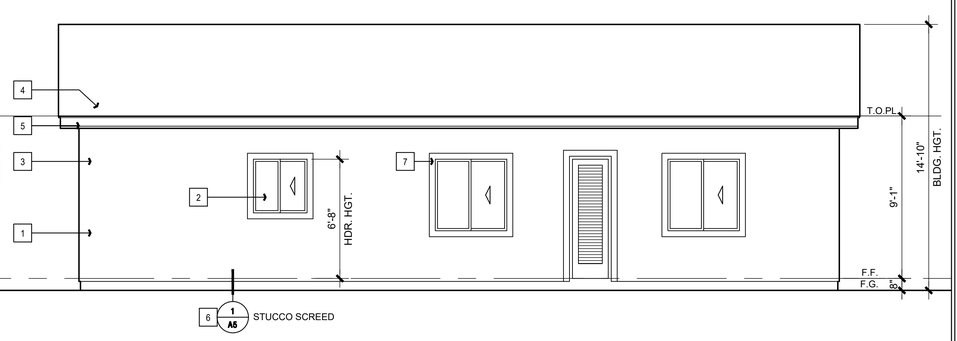
FRONT SIDE ELEVATION SCALE : 1/4" = 1'-0"



ROOF PLAN SCALE : 1/8" = 1'-0"



LEFT SIDE ELEVATION SCALE : 1/4" = 1'-0"



REAR SIDE ELEVATION SCALE : 1/4" = 1'-0"

ROOF NOTES

PROVIDE MINIMUM 2.02 KWdc PHOTOVOLTAIC SYSTEM TO BE SUBMITTED UNDER A SEPARATE PERMIT APPLICATION.

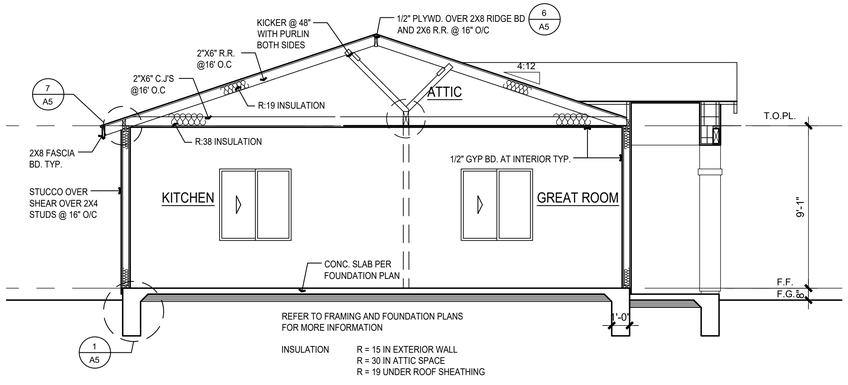
ATTIC VENTILATION

PER CRC SEC. 1505.3 PROVIDE A NET FREE VENTILATING AREA OF NOT LESS THAN 1/300 OF THE AREA OF THE SPACE VENTILATED. PROVIDED AT LEAST 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED (AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS)

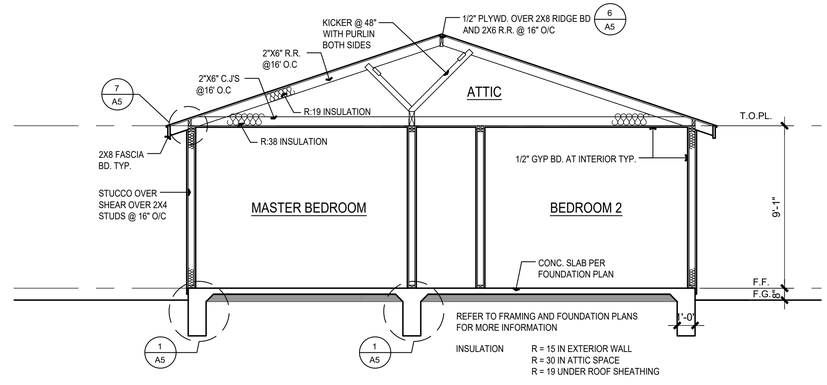
AREA 1

ATTIC SQUARE FOOTAGE- 1,199 SQ. FT.
1,199 SQ. FT. x 1/300- 3.99 SQ. FT. (576 SQ. IN.)

2 - GLABE END VENTS 14"X18" AT 129 SQ. IN.	258 SQ. IN. HIGH
1 - 24" DORMER VENT AT 135 SQ. IN.	135 SQ. IN. HIGH
3 - 24" DORMER VENT AT 135 SQ. IN.	405 SQ. IN. LOW
TOTAL FREE AREA -	798 SQ. IN.



SECTION A SCALE : 1/4" = 1'-0"



SECTION B SCALE : 1/4" = 1'-0"

PLANOS DRAFTING
•Design Drawings
•Construction Drawings
GONZALO GUILLEN
PRINCIPAL
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Tel. 714. 667.0892
Cell 714. 227.1189
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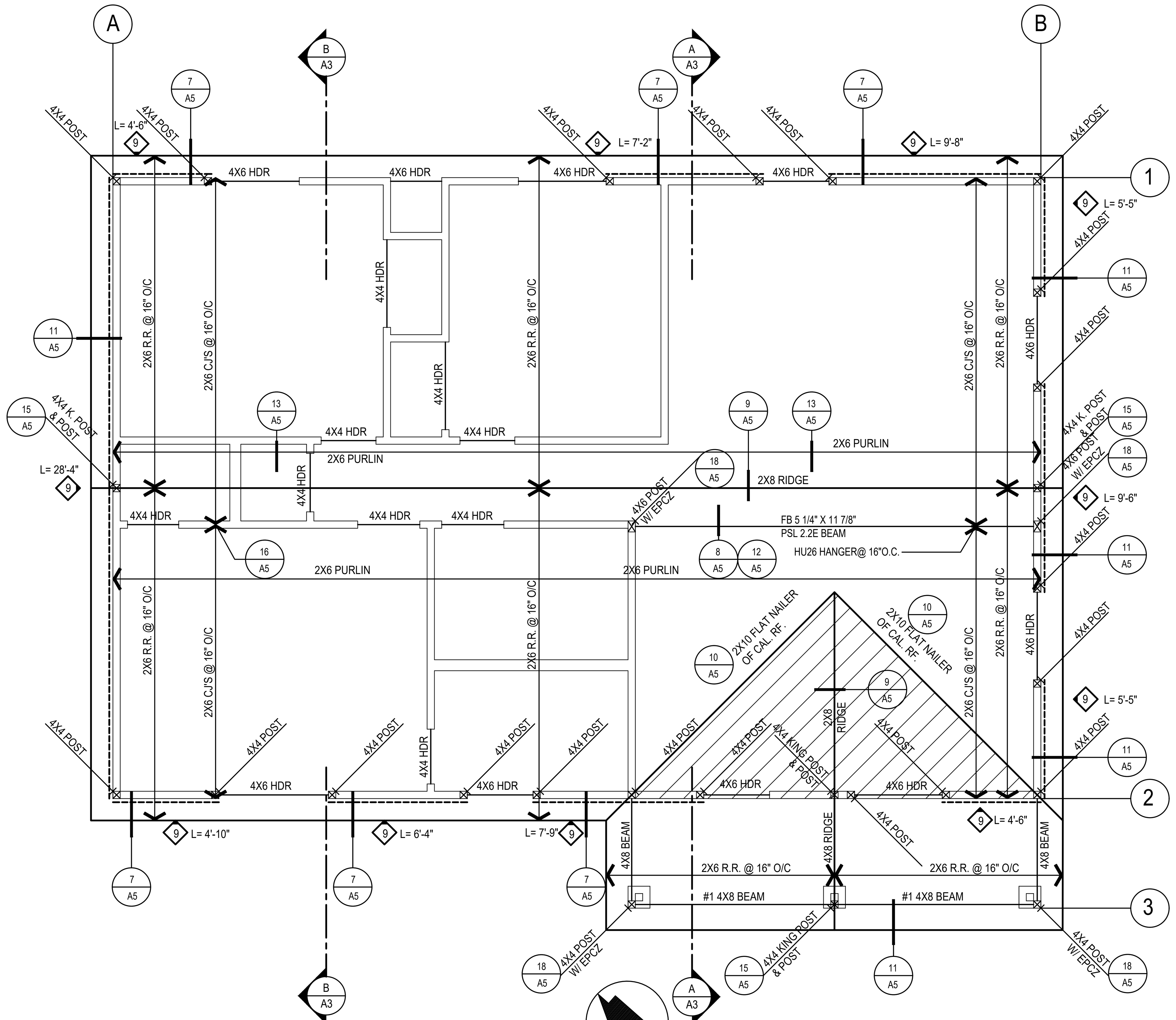
02-03-2025

GABRIEL & MARISA OROZCO
6625 GAYLORD ST
RIVERSIDE, CA 92505

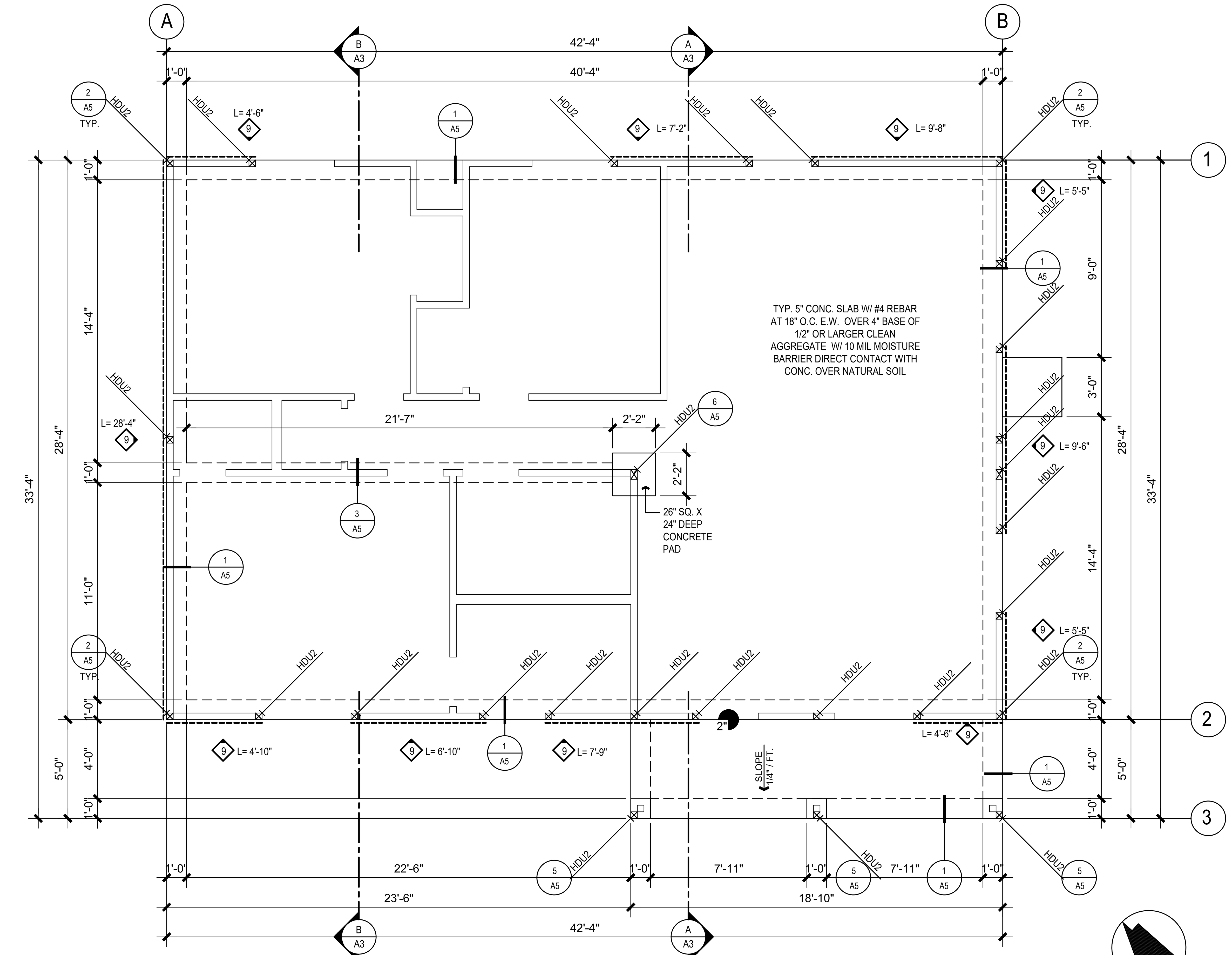
SHEET
A3



FRAMING PLAN

SCALE : 1/4" = 1'-0"

PROJECT NORTH



FOUNDATION PLAN

SCALE : 1/4" = 1'-0"

PROJECT NORTH

FRAMING NOTES:

1. ALL LUMBER TO BE GRADE #1 OR #2 AND SHALL BE MARKED.
2. ALL HARDWARE SHALL BE SIMPSON HARDWARE.
3. ALL CONSTRUCTION SHALL COMPLY W/2022 CBC FOR CONVENTIONAL WOOD FRAME CONSTRUCTION.
4. ROOF SHEATHING TO BE ½" STRUCT C-D OR CC PLYWOOD MIN. PANEL INDEX NUMBER (24/0) WITH 10d NAILS @ 6" O/C BOUNDARY, 6" FIELD FACE GRAIN OF PLYWOOD FACE PERPENDICULAR TO RAFTERS PLYWOOD WITH EXTERIOR GLUE. PROVIDE 2X BLK'G @ PANEL JOINTS.
5. FIELD VERIFY EXISTING CONDITIONS AND CORRECT THEM AS NECESSARY FOR CONSTRUCTION OF THIS PROJECT. ALSO VERIFY THE INFORMATION ON THE DRAWINGS PRIOR TO STARTING THE FRAMING AND NOTIFY THE DESIGNER PRIOR TO STARTING THE FRAMING OF ANY ERRORS ON THE DRAWINGS SO CORRECTIONS CAN BE MADE.
6. "ROOF DIAPHRAGM NAILING TO BE INSPECTED BEFORE COVERING. FACE GRAIN OF PLYWOOD SHALL BE PERPENDICULAR TO SUPPORTS"

SHEAR WALL SCHEDULE

SHEAR WALL SCHEDULE 2021 I.B.C & 2022 C.B.C.

MARK	WALL TYPE	SILL BOLTING				
		ALLOWABLE SHEAR	SHEAR @ ONE SIDE OF WALL	SHEAR @ BOTH SIDES OF WALL	SILL NAILING 16d @ UPPER STORIES	A35 SPACING
8	7/8"STUCCO OVER PAPER BACKED LATH W/16 GA STAPLES AT 6"O.C. AT TOP & BOTTOM PLATES, EDGE OF SHEAR WALL AND ON FIELD (ICC REPORT No. ESR-2595) NOTE 4 AND 10 BELOW.	180 PLF	5/8"@48"O.C.	5/8"@ 24"O.C.	@ 8"O.C.	@ 32"O.C.
9	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 6"O.C. AT EDGES & 6" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 10, 11 & 12 BELOW	280 PLF	5/8"@32"O.C.	5/8"@16"O.C.	@ 6"O.C.	@ 24"O.C.
10	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 4"O.C. AT EDGES & 6" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 6, 10, 11, 12 & 13 BELOW	350 PLF	5/8"@24"O.C.	5/8"@12"O.C.	@ 4"O.C.	@ 16"O.C.
11	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 4"O.C. AT EDGES & 6" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BELOW	430 PLF	5/8"@16"O.C.	5/8"@8"O.C.	@ 4"O.C.	@ 16"O.C.
12	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 3" O.C. AT EDGES & 6" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BELOW	550 PLF	5/8"@16"O.C.	5/8"@8"O.C.	@ 3"O.C.	@ 12"O.C.
13	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 2" O.C. AT EDGES & 6" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BELOW	730 PLF	5/8"@16"O.C.	5/8"@8"O.C.	@ 2"O.C.	@ 8"O.C.
14	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 10d NAILS @ 2" O.C. AT EDGES & 6" O.C. FIELD O/ 3X STUDS (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BLW	870 PLF	3/4"@16"O.C.	3/4"@8"O.C.	N/A	@ 8"O.C.

NOTES:

1. ALL EDGES OF PLYWOOD SHEARWALLS MUST BE BLOCKED WITH 2X SOLID BLOCKING FOR WALL TYPES 9 & 10, AND 3X SOLID BLOCKING FOR WALL TYPES 11, 12, 13, & 14.
2. WHERE SHEAR WALL SHEATHING IS TO BE APPLIED TO BOTH SIDES OF WALL, DOUBLE THE NUMBER OF BOLTS. (I.E. HALF THE O/C SPACING)
3. USE 3X PRESSURE TREATED DOUGLAS FIR SILL PLATES AT FOUNDATION (CONC. SLAB ON GRADE ONLY. NOT REQ'D @ RAISED FLOOR FOUNDATION)
4. PAPER BACKED SELF FURRING EXPANDED METAL LATH WITH ICC APPROVAL
5. FRAMING AT ADJOINING PANEL EDGES SHALL BE 3-INCH NOMINAL OR WIDER & NAILS SHALL BE STAGGERED.
6. WHERE PLYWOOD IS APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6 "O.C ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3- INCHES NOMINAL OR THICKER & NAILS ON EACH SIDE SHALL BE STAGGERED.
7. ALL CONTINUOUS EXTERIOR FOOTING TO HAVE 5/8" X 10" A.B.'S @ 48"O.C. UNLESS OTHERWISE NOTED ON PLANS.
8. AT 3x SILL PLATE USE (2) 20d BOX END NAILS AT STUD TO SILL PLATE CONNECTION IN LIEU OF (2) 16d NAILS PER LINE 8 OF TABLE 2304.9.1 (ALT: PROVIDE SIMP. A34 AT SILL TO STUD)
9. ALL INTERIOR NON BEARING FOOTINGS TO HAVE 7/32" SHOT PINS AT 32" O.C. & 48"O.C RESPECTIVELY. ICC# ESR-2269 (HILTI), OR ICC# ESR-1663 (RAMSET/RED-HEAD).
10. USE 3" X 3" X 0.229" PLATE WASHERS.
11. ALL PLYWOOD SHALL BE DOUGLAS FIR
12. AT EXISTING FOOTINGS USE SIMPSON "SET-XP" EPOXY BOLTS PER SCHEDULED SILL BOLTING, EMBEDED 8", PER ICC# ESR-2508 WITH SPECIAL INSPECTION.
13. PERIODIC SPECIAL INSPECTION REQUIRED ON WOOD SHEAR WALLS WITH NAIL SPACING LESS THAN OR EQUAL TO 4" O.C.
14. GALVANIZED NAILS SHALL BE HOT DIPPED

NOTE: WHERE PANELS ARE APPLIED ON BOTH FACES OF SHEARWALL AND NAIL SPACING IS LESS THAN 6 INCHES ON CENTER ON EITHER SIDE, PANEL JOIST SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS. ALTERNATIVELY, THE WIDTH OF THE NAILED FACE OF FRAMING MEMBERS SHALL BE 3 INCHES OR GREATER AT ADJOINING PANEL EDGES AND NAILS AT ALL PANEL EDGES SHALL BE STAGGERED.

RESIDENTIAL NAILING SCHEDULE
TABLE R602.3(1)

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING OF FASTENERS
Roof			
1	Blocking between joists or rafters to top plate, toe nail	4-8d box (2 ½ x 0.113")or 3-8d (2½" × 0.113"); or 3-10d box (3"x0.128");or 3-3"x0.131" nails	Toe nail
2	Ceiling joists to plate, toe nail	4-8d box (2 ½ x 0.113")or 3-8d (2½" × 0.113"); or 3-10d box (3"x0.128");or 3-3"x0.131" nails	Per joist, toe nail
3	Ceiling joists not attached to parallel rafter, laps over partitions, face (see Sections R802.3.2, R802.3.2 and Table R802.5.1(9))	4-10d box (3"x0.128");or 3-16d common (3 ½" x 0.162");or 4-3"x0.131" nails	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) (see Sections R802.3.1 and R802.3.2 and Table R802.5.1(9))	Table R802.5.1(9)	Face nail
5	Collar tie to rafter, face nail or 1¼" × 20 gage ridge strap to rafter	4-10d box (3"x0.128"); or 3-10d common (3" × 0.148"); or 4-3"x0.131 nails	Face nail each rafter
6	Rafter or roof truss to plate	3-16d box nails (3½" × 0.135") or 3-10d common nails (3" × 0.148"); or 4-10d box (3"x0.128"); or 4-3"x0.131" nails	2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss[i]
7	Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam	4-16d (3½" × 0.135"); or 2-16d common (3½" × 0.162"); or 4-10d box (3"x0.128"); or 4-3" x 0.131 nails	Toe nail
		3-16d box (3½" × 0.135"); or 3-16d common (3½" × 0.148"); or 3-10d box (3"x0.128"); or 4-3" x 0.131 nails	End nails
Wall			
8	Stud to stud (not at braced wall panels)l	16d common (3 ½ " × 0.162")	24" o. c. face nail
		10d box (3" x 0.128"); or 3"x 0.131" nails	16" o. c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d box (3½" × 0.135"); or 3" x 0.131" nails	12" o.c.
		16d common (3 ½" x 0.162")	16" o.c. face nail
10	Built-up header (2" to 2" header with ½" spacer	16d common (3½" × 0.162")	16" o.c. each edge face nail
		16d box (3 ½" x 0.135")	12" o.c. each edge face nail
11	Continuous header to stud	5-8d box (2½" × 0.113"); or 4-8d common (2 ½"x 0.131"); or 4-10 box (3" x 0.128")	Toe nail
12	Top plate to top plate	16d common (3 ½" x 0.162")	16" o.c. face nail
		10d box (3" × 0.128"); or 3" x 0.131" nails	12" o.c. face nail
13	Double top plate splice for SDCs A-D_2 with seismic braced wall line spacing 25'	8-16d common (3½" × 0.162"); or 12-16d box (3 ½" x 0.135"); or 12-10d box (3" x 0.128"); or 12-3" x 0.131 nails	Face nail on each side of end joist (minimum 24" lap splice length each side of end joint)
	Double top plate splice for SDCs D_0,D_1, or D_2; and braced wall line spacing 25'	12-16d (3½" × 0.135")	
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 ½" x 0.162")	16" o.c. face nail
		16d box (3 ½" x 0.135"); or 3" x 0.131" nails	12 " o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking (at braced wall panels)	3-16d box (3½" × 0.135"); or 2-16d common (3½" × 0.162"); or 4-3" x 0.131 nails	3 each 16" o.c. face nail 2 each 16" o.c. face nail 4 each 16" o.c. face nail
16	Top or bottom plate to stud	4-4d box (2 ½" x 0.113"); or 3-16d box (3½" × 0.135"); or 4-8d common (2½" × 0.131"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131 nails	Toe nail
		3-16d box (3 ½" x 0.135"); or 2-16d common (3 ½" x 0.162"); or 3-10d box (3"x 0.128"); or 3-3" x 0.131 nails	End nail
17	Top plates, laps at corners and intersections	3-10d box (3" x 0.128"); or 2 – 12D common (3 ½" x 0.162"): or 3-3" x 0.131 nails	Face nail
18	1" brace to each stud and plate	3-8d box (2½" × 0.113"); or 2-8d common (2 ½"x 0.131"); or 2010d box (3" x 0.128"); or 2 staples 1 ¾" ×	Face nail
19	1" × 6" sheathing to each bearing	3-8d box (2½" × 0.113"); or 2-8d common (2 ½" x 0.131"); or 2-10d box (3" x 0.128"); or 2 staples, 1" crown, 16 ga., 1 ¾" long	Face nail
20	1" × 8" and wider sheathing to each bearing	3-8d box (2½" × 0.113"); or 3-8d common (2 ½" x. 0.131"); or 3-10d box (3" x 0.128"); or 3 staples 1" crown, 16 ga., 1 ¾" long	Face nail
		Wider than 1" x 8" 4-8d box (2 ½" x 0.113"); or 3-8d common (2 ½" x 0.131"); or 4 staples, 1" crown, 16 ga., 1¾" long	
Floor			
21	Joist to sill, top plate or girder	4-8d box (2½" × 0.113"); or 3-8d common (2 ½" x 0.131"); or 3-10d box (3"x 0.128"); or 3-3" x 0131" nails	Toe nail
22	Rim joist, band joist or blocking to sill or top plate (roof application also)	8d box (2½" × 0.113")	4" o.c. toe nail
		8d common (2 ½" x 0.131"); or 10d box (3" x 0.128"); or 3" x 0.131" nails	6" o.c. toe nail
23	1" × 6" subfloor or less to each joist	3-8d box (2½" × 0.113"); or 2-8d common (2 ½" x 0.131"); or 2-10d box (3" x 0.128"); or 2 staples, 1" crown, 16 ga., 1 ¾" long	Face nail
24	2" subfloor to joist or girder	3-16d box (3 ½" x 0.135") 2-10d common (3 ½ " x 0.162")	Blind or face nail
25	2" planks (plank & beam - floor & roof)	3-16d box (3½" × 0.135"); or 2-16d common (3 ½" x 0.162")	At each bearing
26	Band or rim joist to joist	3-16d common (3 ½" x 0.162") 4-10d box (3" x 0.128"), or 4-3" x 0.131" nails, or 4-3" x 14 ga. staples, 7/16" crown	End nail
27	Built-up girders and beams, 2-inch lumber layers	20d common (4" x 0.192"); or	Nail each layer as follows: 32" o.c. at top and bottom and staggered.
		10d box (3" x 0.128"); or 3" x 0.131" nails	24" o.c. face nail at top and bottom staggered on opposite sides.
		And: 2-20d common (4" x 0.192"); or 3-10d common (3 ½" x 0.128"); or 3-3" x 0.131" nails	Face nail at ends and at each splice
28	Ledger strip supporting joists or rafters	4-16d box (3 ½" x 0.135"); or 3-16d common (3½" × 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131 nails	At each joist or rafter, face nail
29	Bridging to joist	2-10d (3" x 0.128")	Each end, toe nail

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER[b, c, e]	SPACING OF FASTENERS	
			Edges (inches)[i]	Intermediate supports[c, e] (inches)
	Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing (see Table R602.3(3) for wood structural panel *exterior* wall sheathing to wall framing)			
30	3/8" - 1/2"	6d common (2" × 0.113") nail (subfloor wall)[j] 8d common (2½" × 0.131") nail (roof)[f]	6	12[f]
31	19/32" - 1"	8d common nail (2½" × 0.131")	6	12[f]
32	1⅛" - 1¼"	10d common (3" × 0.148") nail or 8d (2½" × 0.131") deformed nail	6	12
	Other wall sheathing[h]			
33	½" structural cellulosic fiberboard sheathing	1½" galvanized roofing nail, 7/16" head diameter or 1" crown staple 16 ga., 1¼" long	3	6
34	25/32" structural cellulosic fiberboard sheathing	1¾" galvanized roofing nail, 7/16" head diameter or 1" crown staple 16 ga., 1 1/4" long	3	6
35	½" gypsum sheathing[d]	1½" galvanized roofing nail; staple galvanized, 1½" long; 1¼ screws, Type W or S	7	7
36	⅝" gypsum sheathing[d]	1¾" galvanized roofing nail; staple galvanized, 1⅝" long; 1 5/8"screws, Type W or S	7	7
	Wood structural panels, combination subfloor underlayment to framing			
37	¾" and less	6d deformed (2" × 0.120") nail or 8d common (2½" × 0.131") nail	6	12
38	⅞" - 1"	8d common (2½" × 0.131") nail or 8d deformed (2½" × 0.120") nail	6	12
39	1⅛" - 1¼"	10d common (3" × 0.148") nail or 8d deformed (2½" × 0.120") nail	6	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 Ksi = 6.895 MPa.

a. Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.

b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.

c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.

d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).

f. Where the ultimate design wind speed is 130 mph or less, nails for wood structural panel roof sheathing to gable end wall framing shall be space 6 inches on center. Where the ultimate wind speed is greater than 130 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.

g. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.

h. Spacing of fasteners on floor sheathing panel edges applies to panel edge supported by framing members and required blocking and at floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof and floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

❖ **The fastener schedule provides minimum nailing requirements (i.e. size, spacing) for connecting building elements used in wood framed construction. For wood structural panels, both edge nailing and intermediate (field) nailing are specified. In addition to the nailing for wood structural panels, fasteners are specified for gypsum wall sheathing, cellulosic fiberboard wall sheathing and combination subfloor underlayment.**

FOUNDATION NOTES:

1. ALL CONCRETE SHALL BE F'C = 4,500 P.S.I.(MIN.) TYPE V
2. MIN. 5" CONC. SLAB W/ #4 REBAR AT 18" O.C. E.W. OVER 4" BASE OF 1/2" OR LARGER CLEAN AGGREGATE W/10 MIL MOISTURE BARRIER IN DIRECT CONTACT WITH CONCRETE OVER NATURAL SOIL. SLAB BE TIED IN CONTINUOUS 12" WIDE X 24" (MINIMUM EMBEDMENT INTO FIRM SOIL) FOUNDATION.
3. NEW CONCRETE FOOTING TO HAVE ⅝" THK. X 12"L. GALVANIZED ANCHOR BOLTS SPACED PER SHEAR WALL SCHEDULE. GALVANIZED ANCHOR BOLTS TO HAVE 3" SQ. X 1/4" THK. PLATE WASHER AND EMBEDDED 7" MIN. INTO CONCRETE @ 32" O.C.
4. PLATE WASHERS TO BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING. HOLD DOWN SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALLS
5. HOLD DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.
6. ALL HARDWARE TO BE SIMPSON HARDWARE.
7. FIELD VERIFY EXISTING CONDITIONS AND CORRECT THEM AS NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
8. PRESSURE TREATED SILLS TO BE PROVIDED.
9. SCARIFY 12" PRIOR TO TRENCHING FOR THE UTILITY AND OR FOUNDATION. 90% COMPACTION REPORT IS REQUIRED AT THE TIME OF THE FOUNDATION INSPECTION. PRE-SATURATION SUBGRADE TO 110% OF OPTIMUM MOISTURE CONTENT IS REQUIRED.
10. CONTINUOUS FOUNDATION MUST BE REINFORCED WITH 2 #5 (OR 3 #4) TOP&BOTTOM.
11. SEE SHEET A4 FOR NAILING SCHEDULE INFORMATION

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•Construction Drawings
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02-03-2025

REGISTERED PROFESSIONAL ENGINEER
IGNACIO GARCIA OCHOA
No. 35217
Exp. 9/30/23
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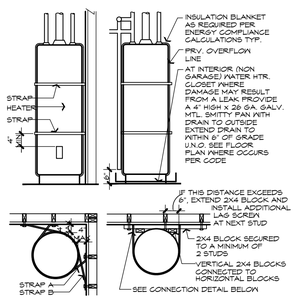
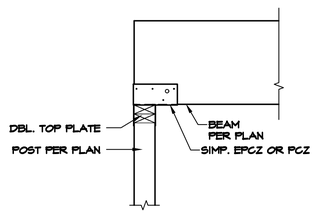
SHEET

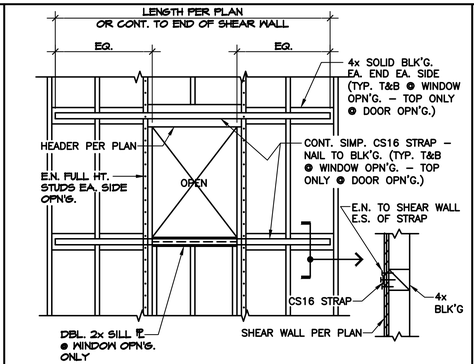
A4



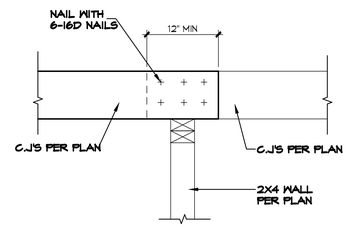
WATER HEATER 14



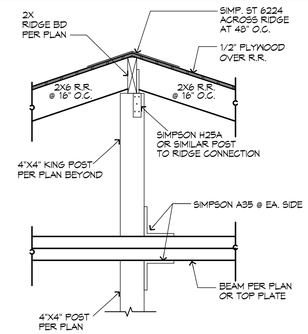
POST TO BEAM (SIMP. EPCZ OR PCZ) 18



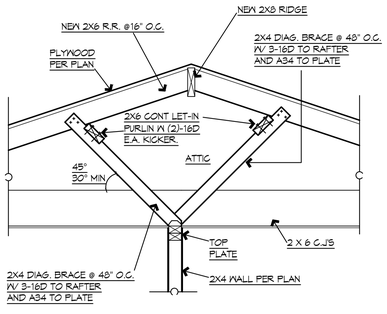
TYP. STRAP @ S.W. OPN'G 17



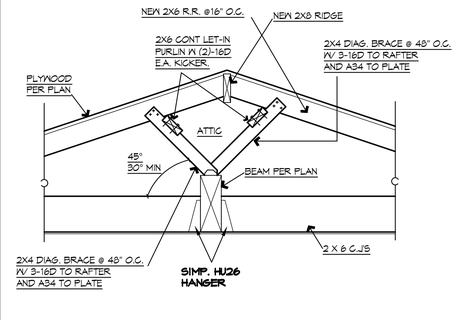
LAPPED C.J'S 16



KING POST WITH RIDGE ABOVE 15



PURLIN TO TOP PLATE 13



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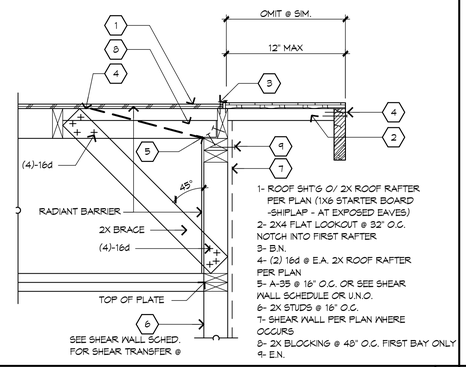
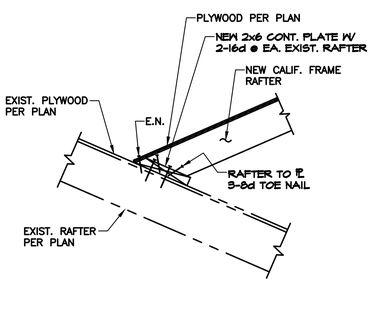
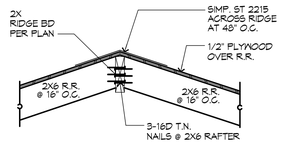


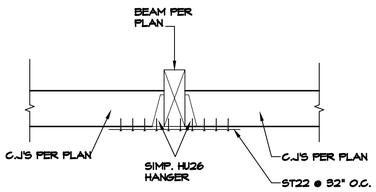
RAKE DETAIL 11



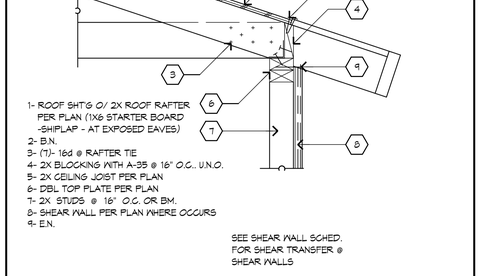
CALIFORNIA FRAME 10



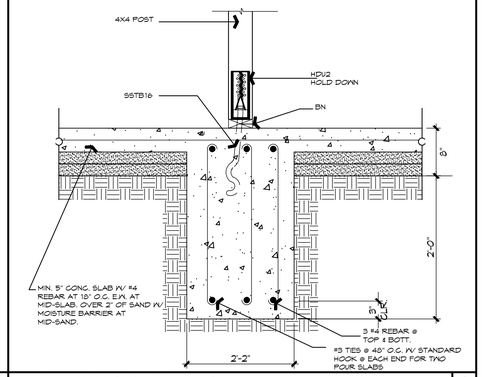
RIDGE DETAIL 9



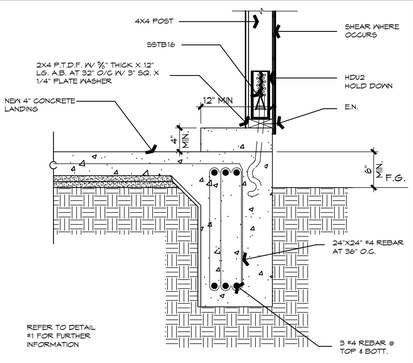
C.J'S TO BEAM CONNECTION 8



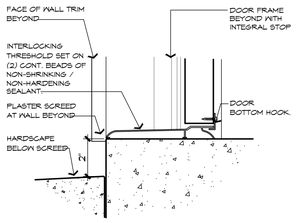
EAVE DETAIL 7



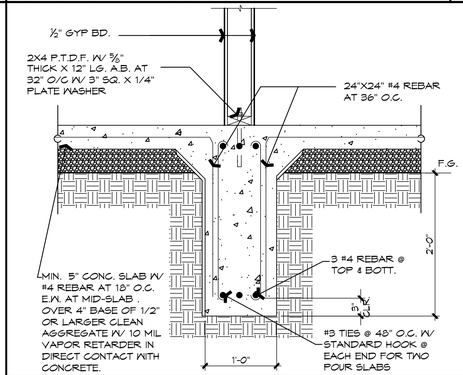
NEW CONCRETE PAD 6



PORCH FOOTING 5

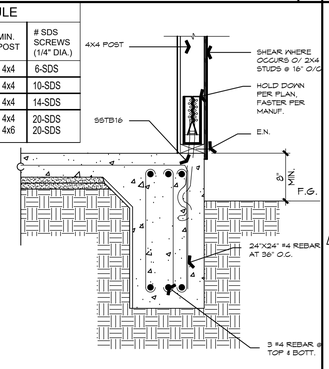


DOOR THRESHOLD 4

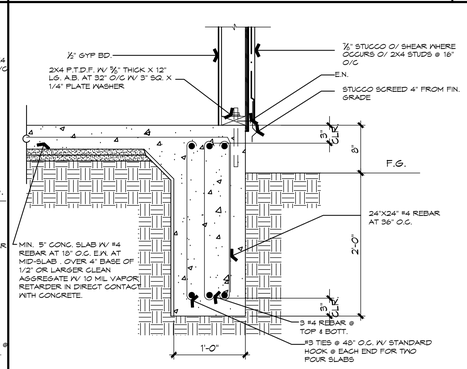


NEW INTERIOR FOOTING 3

SCHEDULE				
TYPE	EMBEDMENT "le" SSTB # 1-POUR	EMBEDMENT "le" SSTB # 2-POUR	MIN. POST	# SDS SCREWS (1/4" DIA.)
HDU2-SDS2.5	16	20	4x4	6-SDS
HDU4-SDS2.5	20	24	4x4	10-SDS
HDU5-SDS2.5	24	24	4x4	14-SDS
HDU8-SDS2.5	28 34	34 34	4x4 4x6	20-SDS 20-SDS



HDU2 OR HDU5 HOLD DOWN @ NEW FOOTING 2



NEW EXTERIOR FOOTING 1

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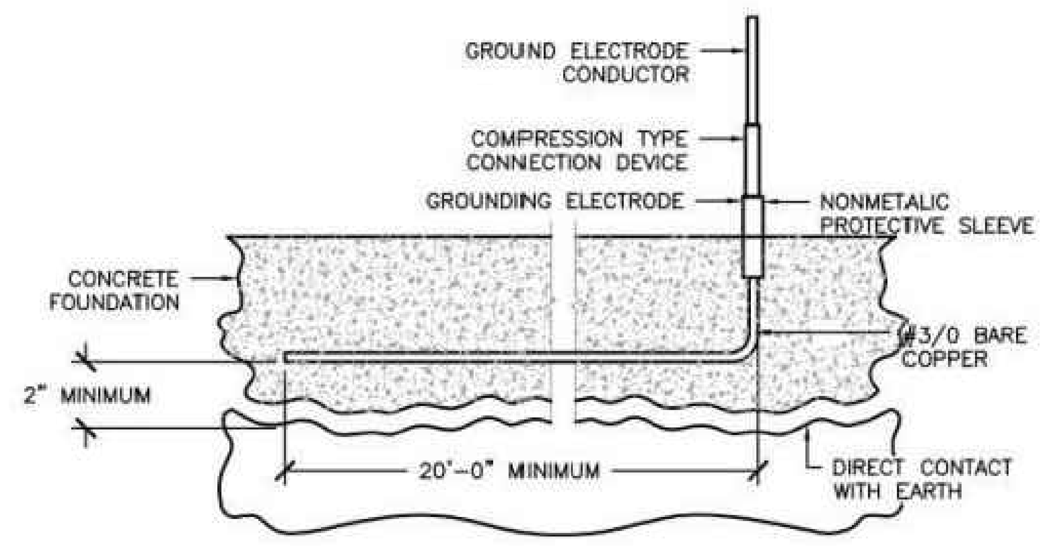
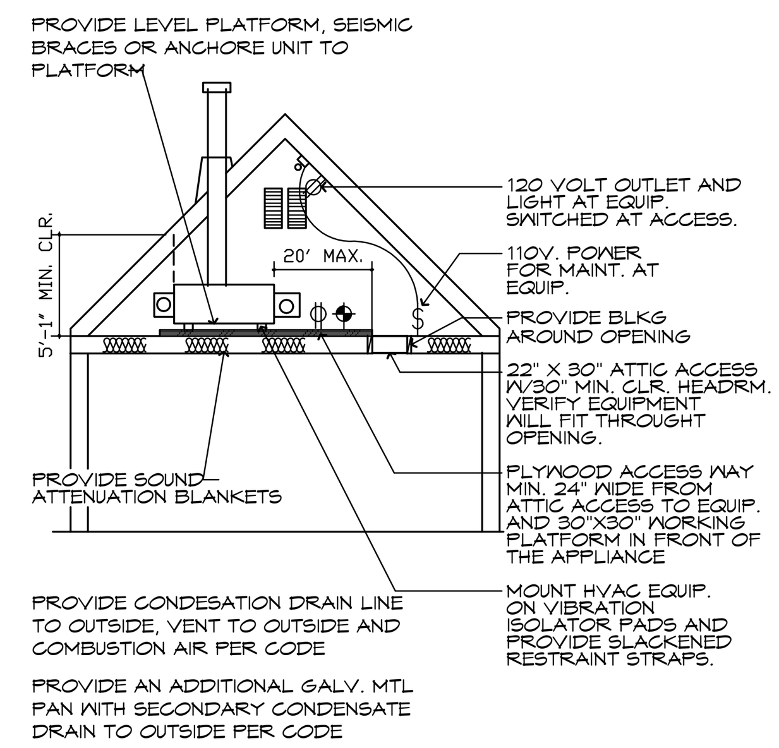


UFER GROUND DETAIL
THE GROUND SYSTEM SHALL CONSIST OF A "UFER" TYPE 20' LONG OF #3/0 BARE COPPER CONDUCTOR EMBEDDED ALONG THE BOTTOM OF A CONCRETE FOOTING OR GRADE BEAM THAT IS IN DIRECT CONTACT WITH THE EARTH

19	UFER GROUND DETAIL 18



F.A.U. IN ATTIC 17

GRAB BARS, TUB AND SHOWER SEATS SHALL COMPLY WITH CBC SECTIONS 1127A.4.

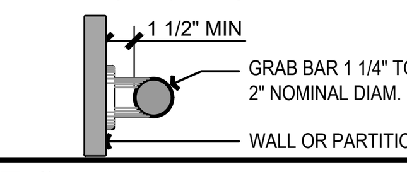
A. GRAB BARS SHALL BE INSTALLED IN A HORIZONTAL POSITION, 33" MINIMUM AND 36" MAXIMUM ABOVE THE FINISH FLOOR MEASURED TO THE TOP OF THE GRIPPING SURFACE.
EXCEPTION: THE HEIGHT OF THE LOWER GRAB BAR ON THE BACK WALL OF A BATHTUB SHALL COMPLY WITH SECTION 1127A.5.2.

B. THE DIAMETER OR WIDTH OF THE GRIPPING SURFACES OF A GRAB BAR SHALL COMPLY WITH THE FOLLOWING:
1. GRAB BARS WITH CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF 1 $\frac{1}{4}$".
2. GRAB BARS WITH NON-CIRCULAR CROSS SECTION SHALL HAVE A CROSS- SECTION DIMENSION OF 2" MAXIMUM. THE PERIMETER DIMENSION OF GRAB BARS WITH NON-CIRCULAR CROSS SECTION SHALL BE 4" MINIMUM AND AND 4.8" MAXIMUM.
3. L-SHAPED OR U-SHAPED GRAB BARS SHALL BE PERMITTED.

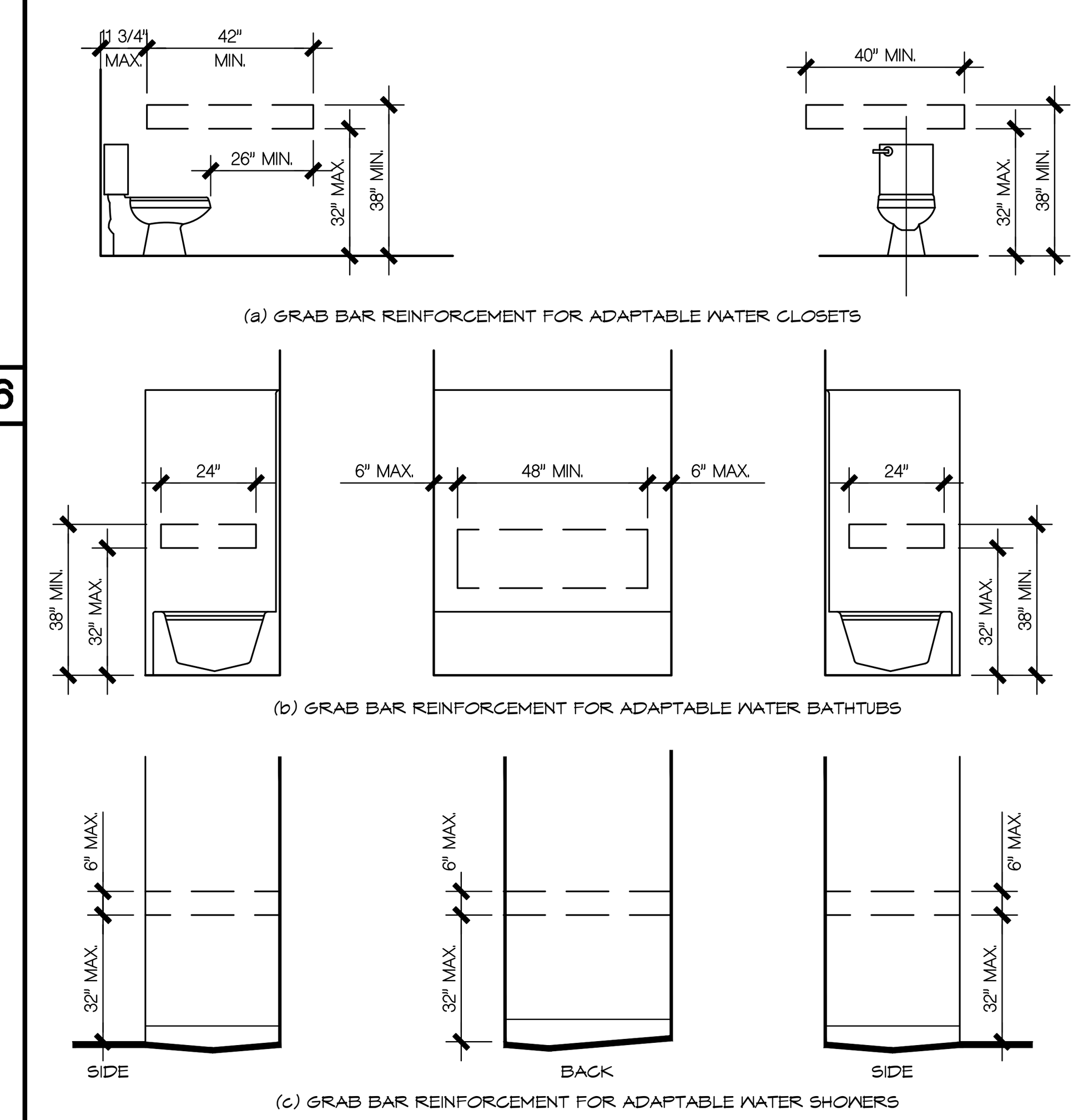
C. THE STRUCTURAL STRENGTH OF GRAB BARS, TUB AND SHOWER SEATS, FASTENERS AND MOUNTING DEVISES SHALL MEET THE FOLLOWING SPECIFICATIONS:
1. BENDING STRESS IN A GRAB BAR OR SEAT INDUCED BY THE MAXIMUM BENDING MOMENT FROM THE APPLICATION OF A 250-POUND POINT LOAD SHALL BE LESS THAN THE ALLOWABLE STRESS FOR THE MATERIAL OF THE GRAB BAR OR SEAT.
2. SHEAR STRESS INDUCED IN A GRAB BAR OR SEAT BY THE APPLICATION OF A 250-POUND POINT LOAD SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE MATERIAL OF THE GRAB BAR OR SEAT, AND IF ITS MOUNTING BRACKET OR OTHER SUPPORT IS CONSIDERED TO BE FULLY RESTRAINED, THEN DIRECT OR TORSIONAL SHEAR STRESSES SHALL NOT EXCEED THE ALLOWABLE SHEAR STRESS.
3. SHEAR FORCE INDUCED IN A FASTENER OR MOUNTING DEVICE FROM THE APPLICATION OF A 250-POUND POINT LOAD SHALL BE LESS THAN THE ALLOWABLE LATERAL LOAD OF EITHER THE FASTENER OR MOUNTING DEVICE OR THE SUPPORTING STRUCTURE, WHICHEVER IS THE SMALLER LOAD.
4. TENSILE FORCE INDUCED BY A FASTENER BY A DIRECT TENSION FORCE OF A 250-POUND POINT LOAD PLUS THE MAXIMUM MOMENT FROM THE APPLICATION OF A 250-POUND POINT LOAD, SHALL BE LESS THAN THE ALLOWABLE WITHDRAWAL LOAD BETWEEN THE FASTENER AND THE SUPPORTING STRUCTURE.
5. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

C. A GRAB BAR AND ANY WALL OR OTHER SURFACE ADJACENT TO IT SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS AND SHALL HAVE ROUNDED EDGES.

D. ADJACENT ELEMENTS, FOR EXAMPLE WATER CLOSET FLUSH VALVES, SHALL BE POSITIONED TO PROVIDE UNOBSTRUCTED USE OF THE GRAB BARS AT THE SPECIFIED LOCATIONS. THE SPACE BETWEEN THE GRAB BAR AND PROJECTING OBJECTS BELOW AND AT THE ENDS SHALL BE 1 1/2" MINIMUM. THE SPACE BETWEEN THE GRAB BAR AND PROJECTING OBJECTS ABOVE SHALL BE 12" MINIMUM.
1. THE SPACE BETWEEN THE GRAB BARS AND SHOWER CONTROLS, SHOWER FITTINGS, AND OTHER GRAB BARS ABOVE SHALL BE PERMITTED TO BE 1 1/2" MINIMUM.

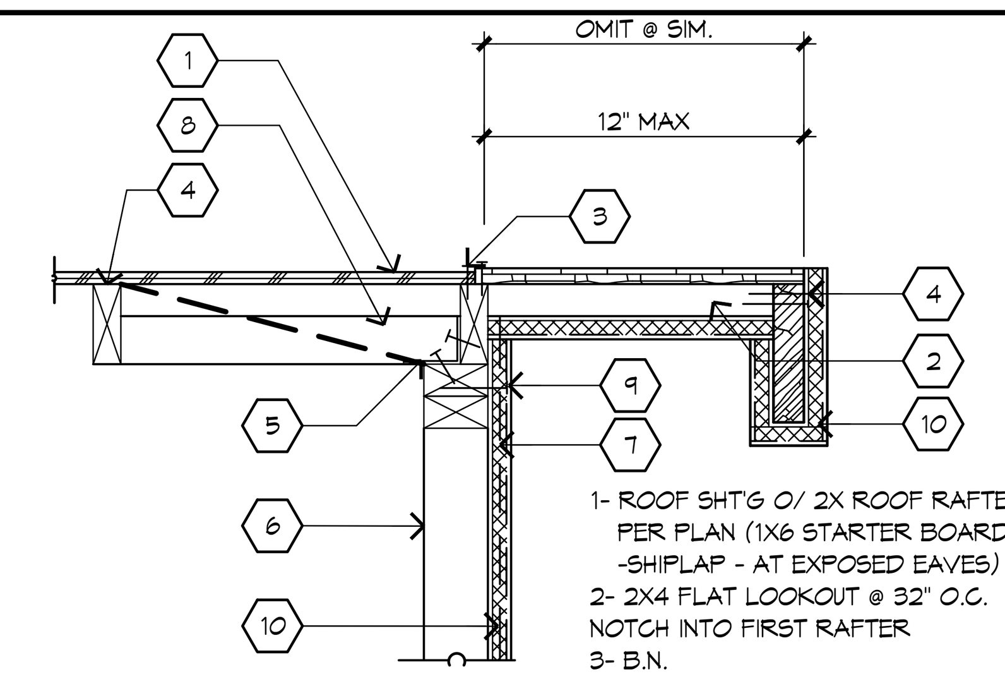


GRAB BARS 16



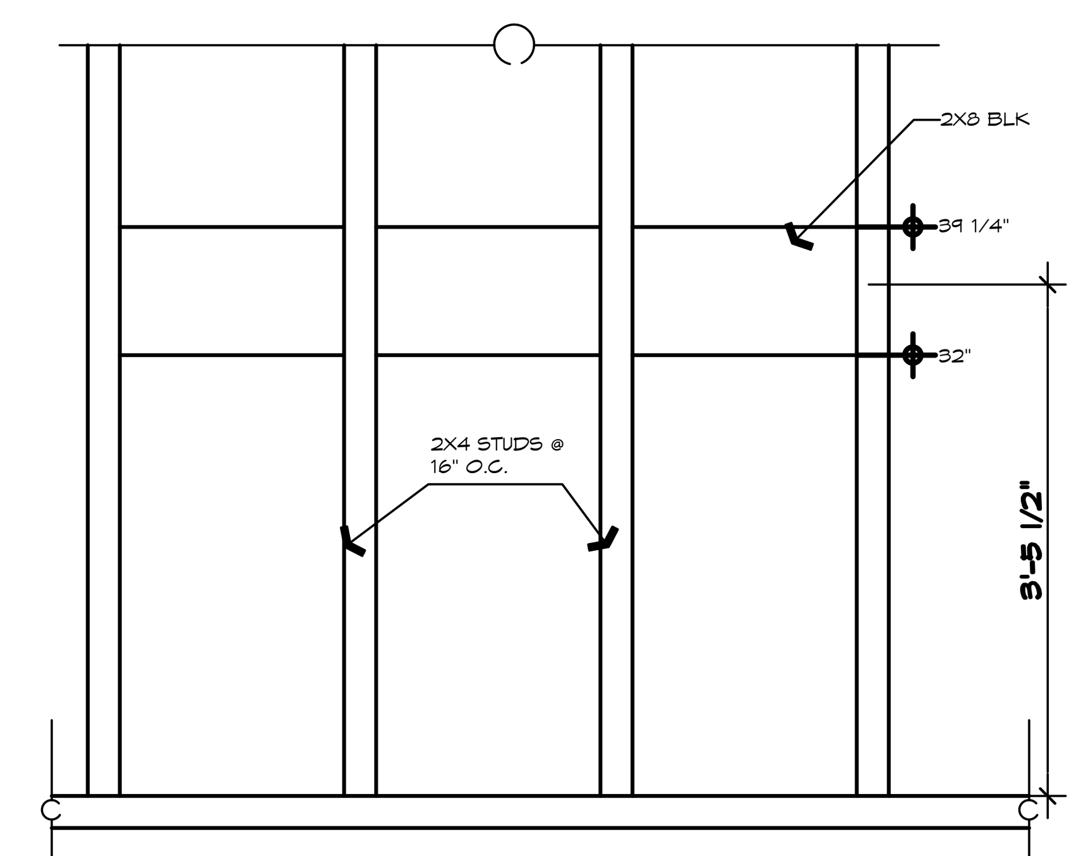
AREAS OUTLINED IN DASHED LINES REPRESENT LOCATION FOR FUTURE INSTALLATION OF GRAB BARS

FIGURE 11A-9G
REINFORCEMENT FOR GRAB BARS



1- ROOF SHT'G O/ 2X ROOF RAFTER PER PLAN (1X6 STARTER BOARD -SHIPLAP - AT EXPOSED EAVES)
2- 2X4 FLAT LOOKOUT @ 32" O.C. NOTCH INTO FIRST RAFTER
3- B.N.
4- (2) 16d @ E.A. 2X ROOF RAFTER PER PLAN
5- A-35 @ 16" O.C. OR SEE SHEAR WALL SCHEDULE OR U.N.O.
6- 2X STUDS @ 16" O.C.
7- SHEAR WALL PER PLAN WHERE OCCURS
8- 2X BLOCKING @ 48" O.C. FIRST BAY ONLY
9- E.N.
10- E.N.

SEE SHEAR WALL SCHED.
FOR SHEAR TRANSFER @



14	13 1-HR RATED RAKE DETAIL	12 GRAB BARS BLOCKING DETAIL	11 GRAB BARS REINFORCEMENT	10
10	9	8	7	6
5	4	3	2	1

PLANOS
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A6

ELECTRICAL NOTES:

1. **Requirements for Electrical Installations** [CEC Art. 110]. *Demonstrate that the electrical installations is in compliance with CEC Art. 110.*

2. **Electrical Service Equipment: Working Space** [CEC 110.26]. *Demonstrate provisions for working space as required by CEC 110.26 based upon nominal voltage to ground and working space conditions with a minimum 3-foot depth requirement and a minimum width requirement equal to the width of the equipment or 30-inches, whichever is wider; and a height of 6'-6" or the height of the equipment, whichever is greater.*

3. **Branch Circuits** [CEC 210.11]. *Provide branch circuits for lighting and appliances as required by CEC 220.10. In addition, branch circuits shall be provided for specific loads not covered by 220.10 where required elsewhere in the CEC and for dwelling unit loads as specified in 210.11(C) for dwelling units.*

   a. **General** [CEC 210.11(A)]. *Determine the total number of branch circuits shall based upon the the total calculated load and the size or rating of the circuits used. Demonstrate that the number of circuits is sufficient to supply the load served. Demonstrate that the load on any circuit does not exceed the maximum specified by CEC 220.18.*

   b. **Dedicated Circuits**

      1) **Small Appliance (Kitchen) Circuits** [CEC 210.11(C)(1)]. *In addition to the number of branch circuits required by other parts of this section, provide two or more 20-ampere small-appliance branch circuits to serve all receptacle outlets specified by 210.52(B).*

      2) **Bathroom Branch Circuits** [CEC 210.11(C)(3)]. *Except as provided for a circuit that supplies power to a single bathroom, in addition to the number of branch circuits required by other parts of CEC 210.11, provide at least one dedicated 120-volt, 20-ampere branch circuit to supply the bathroom(s), receptacle outlet(s).*

         Exception: Where the 20-ampere circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied in accordance with 210.23(A)(1) and (A)(2).

   c. **Dedicated Appliance Circuits**. *Provide dedicated circuits to electric ovens, electric ranges, dishwashers, refrigerators, garbage disposals, air conditioners, clothes dryers/washing machines, etc.*

4. **Dishwashers** [CEC 210.8(D)]. *Dishwashers shall be on a GFCI protected circuit.*

5. **Receptacle Outlets**.

   a. **General Requirements**. *Show that receptacle outlets are in compliance with the requirements in CEC 406, including but not limited to weather-resistant outlets or CEC 406.9 and tamper-resistant of 406.12.*

   b. **Locations** [CEC 210.52]. *Provide receptacle outlets as required by CEC 210.52.*

   c. **Listed Tamper-Resistant Receptacle Outlets** [CEC 406.12]. *Show that all 15- or 20-ampere, 125- and 250-volt , receptacle outlets specified in the dwelling unit provisions of CEC 210.52 are listed tamper-resistant or locking type receptacle outlets.*

   d. **Ground-Fault Circuit Interrupter (GFCI) Protection** [CEC 210.8]. *Provide GFCI protection as required by CEC 210.8.*

   e. **Arc-Fault Circuit Interrupter (AFCI) Protection** [CEC 210.12]. *Provide arc-fault circuit interrupter (AFCI) protection in compliance with CEC 210.12 at all l20-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed kitchens, family rooms, dining rooms, living rooms, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas.*

   f. **Receptacles in Damp or Wet Locations** [CEC 406.9]. *Receptacle outlets in damp or wet locations shall be shown in compliance with CEC 406.9.*

6. **Light Outlets and Luminaires**.

   a. **Requirements and Limitations**. *Provide light outlets as required by CEC 210.70 and as limited by CEnC 150.0(k)1B for blank electrical boxes. The number of blank electrical boxes installed more than 5-feet AFF shall not exceed the number of bedrooms [CEnC 150.0(k)1B].*

   b. **Luminaires**. *Show that lighting outlets comply with the provisions of CEC 410, as well as the energy requirements of CEnC 150.0(k)1A through 150.0(k)1I and that the controls comply with CEnC 150.0(k)2 for interior luminaires and 150.0(k)3 for exterior luminaires.*

   c. **High Efficacy Luminaires** [CEnC 150.0(k)1A and 150.0(k)1I]. *Except for the provisions of CEnC 150.0(k)1H for luminaires in drawers, cabinets and linen closets--ALL luminaires shall be shown as high efficacy luminaires in compliance with the provisions of CEnC Table 150.0_A*

   d. **Exceptions to High Efficacy Lighting** [CEnC 150.0(k)1I]. *Demonstrate that the light sources in drawers, cabinets, and linen closets consume no more than 5 watts or power; emit no more than 150 lumens; and are equipped with with controls that automatically turns the light OFF when the drawer, cabinet or closet door is close--or the luminaire is high efficacy if not in compliance with any of these three requirements.*

   e. **Recessed Luminaires** [CEnC 150.0(k)1A and 15.0(k)1H]. *Show that the recessed luminaires are--listed for zero insulation contact (IC); labeled "air-tight"; sealed with a gasket or caulking between the housing and ceiling [CEnC 150.0(k)1A]; and JA8 compliant [CEnC 150.0(k)1H]. Where applicable for luminaires with hardwired ballasts or drivers, the ballasts or rivers shall be shown readily accessible from below the ceiling.* [CEnC 150.0(k)1A]

   f. **Energy Compliance**. *Luminaires and blank junction boxes shall comply with the energy provisions of CEnC 150.0(k) 1; interior light controls in compliance with CEnC 150.0(k)2; and exterior light controls in compliance with CEnC 150.0(k) 3.*

   g. **Light Controls**.

      1) **Recessed (JA8 compliant) Lighting** [CEnC 150.0(k)2J]. Besides the manual ON/OFF switch, identify dimmer controls, or vacancy sensors or occupancy sensors that operate the recessed lights. Where provided, vacancy sensors or occupancy sensors shall be shown to turn OFF the lights automatically.

      2) **Bathroom Light** [CEnC 150.0(k)2I]. At least one light fixture shall be shown with a vacancy or occupancy sensor with an automatic OFF function.

      3) **Outdoor Lights** [CEnC 150.0(k)3A]. Besides the manual ON-OFF control, show requirements for--a photocell and either a motion sensor or an automatic time switch; or an astronomical time clock control.

Table 150.0-A: HIGH EFFICACY LIGHT SOURCES

Light sources shall comply with one of the columns below:

Light sources in this column, other than those installed in ceiling recessed downlight luminaires, are classified as high efficacy and are not required to comply with Reference Joint Appendix JA8	Light sources in this column are only considered to be high efficacy if they are certified to the Commission as High Efficacy Light Sources in accordance with Reference Joint Appendix JA8 and marked as required by JA8.
1. Pin-based linear fluorescent or compact fluorescent light sources using electronic ballasts. 2. Pulse-start metal halide light sources. 3. High pressure sodium light sources. 4. Luminaires with hardwired high frequency generator and induction lamp. 5. LED light sources installed outdoors. 6. Inseparable SSL luminaires containing colored light sources that are installed to provide decorative lighting.	7. All light sources installed in ceiling recessed downlight luminaires. Note that ceiling recessed downlight luminaires shall not have screw bases regardless of lamp type as described in Section 150.0(k)1C. 8. Any light source not otherwise listed in this table.

6. **Single- and Multiple-Station Smoke Alarm Systems** [CRC R314; CBC 907.10; NFPA 72].

   a. **Interconnection and Power Source** [CRC R314.4 or CBC 907.2.10.5 for interconnection; and CRC R314.6; CBC 907.2.10.6 for power source]. Smoke alarms shall receive their primary power from the building wiring and shall be equipped with a battery backup; and where more than one smoke alarm is required or provided, shall be interconnected.

   b. **Specific Location Requirements [CRC R314.3.3; CBC 907.2.10.7; NFPA 29.8.3.4]**

      1) **Proximity to Bathrooms**. Locate smoke alarms/detectors at least 3-feet from bathroom openings, tips of ceiling fans, as well as supply registers of HVAC systems. And do not locate smoke alarms/detectors in the direct airflow of the registers.

      2) **Proximity to Permanently Cooking Elements**. Maintain at least 6-feet between a smoke detector/alarm and a permanently installed cooking appliance; provide a photoelectric system if the distance is between 6- to 10-feet; or where between 10- to 20-feet provide a photoelectric system or an ionization system with a silencing switch.

7. **Carbon Monoxide Alarm System**. The carbon monoxide alarm shall receive its primary power from the building wiring.

MECHANICAL SYSTEM NOTES:

1. **Sizing and Selection of HVAC Equipment**. [CGBSC 4.507.2; CEnC 150.0(h)]. *The selection and size of heating and air-conditioning systems using one of the methods identified in CGBSC 4.507.2 and using the heating and cooling loads identified in CEnC 150.0(h). HVAC equipment shall also be shown to comply with the provisions of the Certificate of Compliance, CF-1R form*

2. **Return Air Limitations** [CMC 311.4]. *Return air from one dwelling unit shall not discharge into another dwelling unit through the heating or cooling air system.*

3. **Covering of Duct Openings and Mechanical Equipment During Construction** [CGBSC 4.504.1]. *During storage on the construction site and until final startup of the heating, cooling and ventilating equipment, cover all duct and other related air distribution component openings with tape, plastic, sheet rental or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris, which may enter the system.*

4. **Locations of Outdoor Condensing Units** [CEnC 150.0(h)3]. *Locate outdoor condensing units at least 5-feet from the outlet of any dryer vent.*

5. **Installation**.

   a. **General.** *Install mechanical systems in compliance with the general regulations of CMC Chapter 3, as well as the energy provisions of CEnC 150.0(h) for space conditioning equipment and other parts of CEnC 150.0 where applicable for the system.*

   b. **Receptacle Outlet** [CEC 210.63]. *Provide a 125-volt, single-phase, 15- or 20-ampere receptacle outlet at an accessible location within 25 of HVAC equipment for the servicing purposes.*

6. **Local Ventilation and Environmental Air Ducts** [ASHRAE 62.2, Section 5 as referenced from CEnC 150(o)]. *Provide a kitchen hood or and fan that is in compliance with the provisions of ASHRAE 62.2 as referenced from and amended by CEnC 150.0(o).*

   a. **Exhaust Rates: Open Kitchens** [ASHRAE 62.2, Tables 5.1 and 5.2]. *In an open-kitchen, provide an exhaust hood with a minimum demand-controlled exhaust rate of 100 CFM, or an exhaust fan (including, but not limited to down-draft) with a minimum demand-controlled exhaust rate of 300 CFM.*

   b. **Duct used for Domestic Kitchens** [CMC 504.3]. *Except as permitted for Schedule 40 PVC ducts under a concrete floor as provided for in CPC 504.3, show provisions for metal ducts with smooth interiors for duct work of kitchen hoods or fans.*

   c. **HERS Rating** [CEnC 150.0(o)2]. *Obtain HERS verification for the airflow and sound rating of kitchen hoods.*

   d. **Bathroom Fans**. *Besides the other general requirements for environmental exhaust ducts and sound rating, bathroom fans shall be shown Energy Star compliant, controlled by a humidity sensor that can be adjusted from between less than or equal to 50-percent to 80-percent [CGBSC 4.506.1]; and bathroom fans shall be switched separately from lights, unless the fan is allowed to operate when the fan is switched OFF [CEnC 150.0(k)2B].*

   e. **Ducts for Bathroom Fans** [ASHRAE 62.2, 5.4]. *Install ducts for bathroom fans in accordance with the fan manufacturer's written installation instructions, the prescriptive provisions of ASHRAE 62.2, Table 5.3 or the airflow shall be tested as required by and in compliance with ASHRAE 62.2, 5.4.*

7. **Sound Rating of Exhaust Fans** [ASHRAE 62.2, 7.2]. *Except as provided for in ASHRAE 62.2, 7.2 for remote located fans with at least 4-feet of duct work between the grille and fan, and fans with a minimum exhaust rate greater than 400 CFM--*

   a. Provide fans with a maximum sound rating of one sone for continuous fans or fans for whole-house ventilation.

   b. Demand-controlled (intermittent) fans are to have a maximum 3-sone sound rating.

   c. Remote located fans in compliance with the exception in ASHRAE 62.2, 7.2 and fans with a minimum exhaust rate greater than 400 CFM are exempt from the sound ratings.

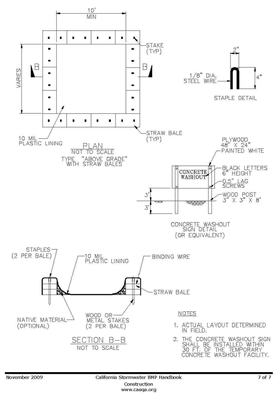
8. **Termination of Environmental Air Ducts**.

   a. Terminate environmental air ducts not less tan 3-feet from a property line or openings into a building; and 10-feet from a forced air inlet. [CEnC 502.2.1].

   b. Terminate exhaust ducts outside and equipped by a backdraft damper or a motorized damper that automatically shuts when the device is not in use. [CMC 504.1.1]

CONCRETE WASTE MANAGEMENT

Concrete Waste Management **WM-8**



PLUMBING SYSTEM NOTES:

1. **General Provisions** [CRC R106.1; CBC 107.2]. *Install Hot Water Heaters, hot water distribution systems that are in compliance with the Certificate of Compliance, CF-1R form; the provisions of CPC Chapter 5 and CEnC 150.0(n) for hot water heaters; as well as CEnC 150.0(j) and CMC 606.9 for the insulation of hot water piping systems.*

2. **Toilet Facility Space Requirements** [CPC 403]. *Show provisions for a clear floor space around water closets that is 15-inches on each side of the centerline of the water closet and that extends from the rear wall to 24-inches in front of the water closet rim. And show provisions for a 24-inch clear floor space in front of lavatories.*

3. **Showers or Tubs with Shower Heads** [CPC 408.3; CBC 1 209.2.3]. *For showers or tubs with showerheads--*

   a. **Nonabsorbent Surfaces** [CRC R307.2]. *Show provisions for minimum 6-foot high, non-absorbent wall surfaces adjacent to the shower or tub.*

   b. **Control Valves** [CPC 408.3]. *Provide thermostatic, pressure-balance, or combination thermostatic/pressure-balance control valves*

4. **Shower Compartments**.

   a. **Size and Space Requirements** [CPC 408.6] *Show that the INTERIOR of the shower is of adequate size to encompass a 30-inch diameter circle and provide a minimum 1024 square inch floor area (e.g.--32-inch by 32-inch or 30-inch by 35-inch interior space)*

   b. **Safety (Tempered) Glazing** [CRC R308.4.5; CBC 2406.5]. *Show that glazing adjacent to, and less than 60" AFF, a shower or tub is Category II safety (tempered) glazing tested in accordance with CPSC 16 CFR 1201.*

   c. **Minimum Door Width** [CPC 408.5]. *Show that thresholds of shower enclosures are of a sufficient width to accommodate a door with a minimum clear width of 22-inches and where a door is installed--the door, when opened maintains a 22-inch, unobstructed opening for egress without swinging over the minimum clear floor area.*

   d. **Placement of Heads and Valves** [CPC 408.9]. *Show that control valves and shower heads are arranged so that the bather can adjust the shower valves prior to stepping into the shower spray.*

5. **Concealed Slip Joint** CPC 402.10]. *Where applicable to concealed slip-joints, provide an access panel and/or utility space with a minimum 12-inch dimension in its least dimension to access concealed slip joint connections for repair and inspections.*

6. **Hot Water Heater Installations**

   a. **Temperature, Pressure, and Vacuum Relief Devices** [CPC 504.6]. *Install temperature, pressure, and vacuum relief devices or combinations thereof, and automatic gas shutoff devices in accordance with the manufacturer's instructions.*

   b. **Isolation Valves for instantaneous water heater with an Input Rating Greater than 6.8k BTU/hr (2kW)** [CEnC 110.3(c)7]. *Install isolation valves on both the cold water supply line and hot water pipe leaving the hot water heater, as well as the hose bibbs or other fittings on each flushing the water heater when the valves are closed when the instantaneous water heater has with Input Rating Greater than 6.8k BTU/hr (2kW).*

   c. **Energy Requirements**

      1) **Residential Water System Insulation** [CEnC 150.0(j)2A]. *Insulate the following piping conditions with either insulation that has a minimum 1-inch thickness or a minimum R-value of 7.7:*

         a) The first 5 feet of cold water pipes from the storage tanks;

         b) All hot water piping with a nominal diameter equal to or greater than 3/4 -inch and less than 1-inche.

         c) All hot water piping with a nominal diameter less than 3,/4 inch that is:

            (1) Associated with a domestic hot water recirculating system;

            (2) From the heating source to the kitchen fixtures;

            (3) From the heating source to a storage tank or between storage tanks; or

            (4) Buried below ground.

         d) Insulation Protection [CEnC 150.0(j)3]. *Pipe insulation shall meet the protection requirements of CEnC 120.3(b).*

      2) **Gas or Propane Systems** [CEnC 150.0(n)1]. *Systems using gas or propane shall be shown to include the following components:*

         a) A gas supply line with capacity of at least 200,000 Btu/hr; and

         b) A condensate drain no more than 2 inches higher than the base on water heater for natural draining; and

         c) A Category III or IV vent, or a Type B vent with straight pipe between outside termination and the water heater; and

         d) A dedicated 125-volt, 20 ampere electrical receptacle outlet that is connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within 3 feet from the water heater and accessible to the water heater with no obstructions. A 120V electrical receptacle is within 3 feet from the water heater and accessible with no obstructions. In addition--

            (1) Both ends of the unused conductor shall be labeled with the word "spare" and be electrically isolated; and

            (2) A reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit in A above and labeled with the words "Future 240V Use"

AGING-IN-PLACE NOTES:

A. REINFORCEMENT FOR GRAB BARS. [R327.1.1] AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH REINFORCEMENT INSTALLED IN ACCORDANCE WITH THIS SECTION. WHERE IS NO BATHROOM ON THE ENTRY LEVEL, AT LEAST ONE BATHROOM ON THE 2ND OR 3RD FLOOR OF THE DWELLING SHALL COMPLY WITH THIS SECTION.
1. REINFORCEMENT SHALL BE SOLID LUMBER OR OTHER CONSTRUCTION MATERIALS APPROVED BY THE ENFORCING AGENCY.
2. REINFORCEMENT SHALL NOT BE LESS THAN 2 BY 8 INCH NOMINAL LUMBER (1-1/2" X 7-1/4" ACTUAL DIMENSION) OR OTHER CONSTRUCTION MATERIAL PROVIDING EQUAL HEIGHT AND LOAD CAPACITY. REINFORCEMENT SHALL BE LOCATED BETWEEN 32" AND 39-1/4" ABOVE THE FINISHED FLOOR, FLUSH WITH THE WALL FRAMING.
3. WATER CLOSET REINFORCEMENT SHALL BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ONE SIDE WALL AND THE BACK WALL.
4. SHOWER REINFORCEMENT SHALL BE CONTINUOUS WHERE WALL FRAMING IS PROVIDED.
5. BATHTUB AND COMBINATION BATHTUB/SHOWER REINFORCEMENT SHALL BE CONTINUOUS ON EACH END OF THE BATHTUB AND THE BACK WALL. ADDITIONALLY, BACK WALL REINFORCEMENT FOR A LOWER GRAB BAR SHALL BE PROVIDED WITH THE BOTTOM EDGE LOCATED NO MORE THAN 6" ABOVE THE BATHTUB RIM.
6. WHERE THE WATER CLOSET IS NOT PLACED ADJACENT TO A SIDE WALL CAPABLE OF ACCOMMODATING A GRAB BAR, THE BATHROOM SHALL HAVE PROVISIONS FOR INSTALLATION OF FLOOR-MOUNTED, FOLDAWAY OR SIMILAR ALTERNATE GRAB BAR REINFORCEMENTS APPROVED BY THE ENFORCING AGENCY.

B. DOCUMENTATION FOR GRAB BAR REINFORCEMENT. [327.1.1.1] INFORMATION AND/OR DRAWINGS IDENTIFYING THE LOCATION OF GRAB BAR REINFORCEMENT SHALL BE PLACED IN THE OPERATION & MAINTENANCE MANUAL IN ACCORDANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS CODE, CH. 4, DIVISION 4.4.

C. ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROL HEIGHTS. [R327.1.2] ELECTRICAL RECEPTACLE OUTLETS, SWITCHES AND CONTROL (INCLUDING CONTROLS FOR HEATING, VENTILATION AND AIR CONDITIONING) INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48" MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15" MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THIS FINISH FLOOR.

D. INTERIOR DOORS. [R327.1.3] EFFECTIVE JULY 1, 2024, AT LEAST ONE BATHROOM AND ONE BEDROOM ON THE ENTRY LEVEL SHALL PROVIDE A DOORWAY WITH A NET CLEAR OPENING OF NOT LESS THAN 32", MEASURED WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM THE CLOSED POSITION, OR, IN THE CASE OF A 2- OR 3- STORY SINGLE FAMILY DWELLING, ON THE 2ND OR 3RD FLOOR OF THE DWELLING IF A BATHROOM OR BEDROOM IS NOT LOCATED ON THE ENTRY LEVEL.

E. DOORBELL BUTTONS [R327.1.4] DOORBELLS BUTTONS OR CONTROLS SHALL WHEN INSTALLED, SHALL NOT EXCEED 48" ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY. WHERE DOORBELL BUTTONS INTEGRATED WITH OTHER FEATURES ARE REQUIRED TO BE INSTALLED ABOVE 48" MEASURED FROM THE EXTERIOR FLOOR OR LANDING, A STANDARD DOORBELL BUTTON OR CONTROL SHALL ALSO BE PROVIDED AT A HEIGHT NOT EXCEEDING 48" ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON OR CONTROL.

PLANOS DRAFTING
•Design Drawings
•Construction Drawings
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02-03-2025

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SHEET
A7

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O³/g ROC).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).
Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

4.503 FIREPLACES
4.503.1 GENERAL. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

4.504 POLLUTANT CONTROL
4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust or debris which may enter the system.

4.504.2 FINISH MATERIAL POLLUTANT CONTROL. Finish materials shall comply with this section.

4.504.2.1 Adhesives, Sealants and Caulks. Adhesives, sealant and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and tricloroethylene), except for aerosol products, as specified in Subsection 2 below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with section 94507.

4.504.2.2 Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.

4.504.2.3 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification.
2. Field verification of on-site product containers.

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]

(Less Water and Less Exempt Compounds in Grams per Liter)

ARCHITECTURAL APPLICATIONS	VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVE	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABS WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP & TRIM ADHESIVE	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR

TABLE 4.504.2 - SEALANT VOC LIMIT

(Less Water and Less Exempt Compounds in Grams per Liter)

SEALANTS	VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]

GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT COATINGS	100
NONFLAT-HIGH GLOSS COATINGS	150
SPECIALTY COATINGS	
ALUMINUM ROOF COATINGS	400
BASEMENT SPECIALTY COATINGS	400
BITUMINOUS ROOF COATINGS	50
BITUMINOUS ROOF PRIMERS	350
BOND BREAKERS	350
CONCRETE CURING COMPOUNDS	350
CONCRETE/MASONRY SEALERS	100
DRIVEWAY SEALERS	50
DRY FOG COATINGS	150
FAUX FINISHING COATINGS	350
FIRE RESISTIVE COATINGS	350
FLOOR COATINGS	100
FORM-RELEASE COMPOUNDS	250
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500
HIGH TEMPERATURE COATINGS	420
INDUSTRIAL MAINTENANCE COATINGS	250
LOW SOLIDS COATINGS[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & TILE REFINISH COATINGS	420
WATERPROOFING MEMBRANES	250
WOOD COATINGS	275
WOOD PRESERVATIVES	350
ZINC-RICH PRIMERS	340

1. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT COMPOUNDS

2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE LISTED IN SUBSEQUENT COLUMNS IN THE TABLE.

3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, ARCHITECTURAL COATINGS SUGGESTED CONTROL MEASURE, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16 INCH.

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)

4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 RESILIENT FLOORING SYSTEMS. Where resilient flooring is installed , at least 80% of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

hhttps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.).
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.
5. Other methods acceptable to the enforcing agency.

4.505 INTERIOR MOISTURE CONTROL
4.505.1 General. Buildings shall meet or exceed the provisions of the *California Building Standards Code*.

4.505.2 CONCRETE SLAB FOUNDATIONS. Concrete slab foundations required to have a vapor retarder by California Building Code, Chapter 19, or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of 1/2 inch (12.7mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
2. Other equivalent methods approved by the enforcing agency.
3. A slab design specified by a licensed design professional.

4.505.3 MOISTURE CONTENT OF BUILDING MATERIALS. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or contact-type moisture meter.Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

4.506 INDOOR AIR QUALITY AND EXHAUST
4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
   a. Humidity controls shall be capable of adjustment between a relative humidity range less than or equal to 50% to a maximum of 80%. A humidity control may utilize manual or automatic means of adjustment.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in)

Notes:

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or tub/shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the *California Energy Code*.

4.507 ENVIRONMENTAL COMFORT
4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN. Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J - 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S - 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are acceptable.

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS
702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs.
2. Public utility training programs.
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
4. Programs sponsored by manufacturing organizations.
5. Other programs acceptable to the enforcing agency.

702.2 SPECIAL INSPECTION [HCD]. When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the enforcing agency.

Notes:

1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

[BSC] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

703 VERIFICATIONS
703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified applicable checklist.

PLANOS DRAFTING
•Design Drawings
•Construction Drawings
GONZALO GUILLEN
PRINCIPAL
718 S. Hickory St.
Santa Ana, CA 92701
Tel. 714. 667.0892
Cell 714. 227.1189
Email: gplanos@sbcglobal.net

02-03-2025

GABRIEL & MARISA OROZCO
6625 GAYLORD ST
RIVERSIDE, CA 92505

SHEET
A9

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

Y	N/A	RESPON. PARTY

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.

The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

Exceptions:
1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.
2. [HCD] For purposes of *CALGreen*, live/work units, complying with Section 419 of the *California Building Code*, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

HCD	Department of Housing and Community Development
BSC	California Building Standards Commission
DSA-SS	Division of the State Architect, Structural Safety
OSHPD	Office of Statewide Health Planning and Development
LR	Low Rise
HR	High Rise
AA	Additions and Alterations
N	New

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

4.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

4.106 SITE DEVELOPMENT

4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code*, Article 625.

Exceptions:
1. On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
   1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power.
   1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the *California Electrical Code.*

4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Exceptions:

1.When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.

2.When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

Notes:

a.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.

Notes:

a.Construction documents shall show locations of future EV spaces.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

3.EV Chargers. Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

4.106.4.2.2.1 Electric vehicle charging stations (EVCS).
Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

4.106.4.2.2.1.1 Location.
EVCS shall comply with at least one of the following options:

1.The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2.The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3.

4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions.
The charging spaces shall be designed to comply with the following:

1.The minimum length of each EV space shall be 18 feet (5486 mm).

2.The minimum width of each EV space shall be 9 feet (2743 mm).

3.One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).

a.Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.2.1.3 Accessible EV spaces.
In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

4.106.4.2.3 EV space requirements.
1.Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable. The service panel and/ or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.

2.Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.

4.106.4.2.4 Identification.
The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.

4.106.4.2.5 Electric Vehicle Ready Space Signage
Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.
When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.

Notes:

1.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

2.There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4.

Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads.

4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.

Note: A hand-held shower shall be considered a showerhead.

4.303.1.4 Faucets.

4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.

4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver more than 0.2 gallons per cycle.

4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

4.303.1.4.5 Pre-rinse spray valves.
When installed, shall meet the requirements in the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7) and shall be equipped with an integral automatic shutoff.

FOR REFERENCE ONLY: The following table and code section have been reprinted from the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations),Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).

TABLE H-2

STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019

PRODUCT CLASS [spray force in ounce force (ozf)]	MAXIMUM FLOW RATE (gpm)
Product Class 1 (≤ 5.0 ozf)	1.00
Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)	1.20
Product Class 3 (> 8.0 ozf)	1.28

Title 20 Section 1605.3 (h)(4)(A): Commercial prerinse spray valves manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf)[113 grams-force(gf)]

4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.
Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the *California Plumbing Code.*

4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.

NOTE:
THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.

TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

4.304 OUTDOOR WATER USE

4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

NOTES:

1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the *California Code Regulations*, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 RODENT PROOFING. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Exceptions:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
2. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream).
3. Identify diversion facilities where the construction and demolition waste material collected will be taken.
4. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.

4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, items 1 through 5, Section 4.408.3 or Section 4.408.4..

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section.
2. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

4.410 BUILDING MAINTENANCE AND OPERATION

4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
   a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
   b. Roof and yard drainage, including gutters and downspouts.
   c. Space conditioning systems, including condensers and air filters.
   d. Landscape irrigation systems.
   e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspections verifications required by the enforcing agency or this code.
11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.
12. Information and/or drawings identifying the location of grab bar reinforcements.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

4.501.1 Scope
The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors.

SECTION 4.502 DEFINITIONS

5.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1.

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

PLANOS DRAFTING
•Design Drawings
•Construction Drawings
GONZALO GUILLEN
PRINCIPAL
718 S. Hickory St.
Santa Ana, CA 92701
Tel. 714. 667.0892
Cell 714. 227.1189
Email: gplanos@sbcglobal.net

02-03-2025

REGISTERED PROFESSIONAL ENGINEER JOVANCO GARCIA OCHOA No. 36217 Exp. 9/30/25 CIVIL STATE OF CALIFORNIA

GABRIEL & MARISA OROZCO
6625 GAYLORD ST
RIVERSIDE, CA 92505

SHEET
A8

GENERAL NOTES

1. EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE NOTED OR SHOWN ON THE PLANS, WORKMANSHIP & MATERIALS SHALL CONFORM TO THE **2022** CBC

2. THE PLANS SHALL BE REVIEWED FOR DIMENSIONAL & EXISTING SITE CONFORMANCE WITH THE PLANS BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE ARCHITECT & ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES.

3. WORKING DIMENSIONS SHALL NOT BE SCALED FROM DRAWINGS.

4. ITEMS IDENTIFIED BY TRADE NAMES MAY BE SUBSTITUTED BY APPROVED EQUALS.

5. NOTES & DETAILS ON DRAWINGS SHALL PRECEDE THESE GENERAL NOTES

REMODELING NOTES

1. PROVIDE ANY SHORING & OR BRACING PRIOR TO REMOVING EXISTING WALLS, BEAMS, OR SUPPORTS FOR CONSTRUCTION. REMOVE SHORING ONLY WHEN NEW SUPPORTS ARE IN PLACE AND SECURED.

2. PROVIDE RED HEADS INTO EXISTING CONCRETE AT ALL SHEAR WALLS PER MFG. SPECIFICATIONS. SEE SHEAR WALL SCHEDULE FOR SIZE AND SPACING.

3. PROVIDE SIMPSON ST-6224 BETWEEN NEW WALLS AND EXISTING WALLS AT THE DOUBLE TOP PLATE.

4. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON DRAWINGS AND PROTECT THEM FROM DAMAGE.

5. DO NOT CUT POST TENSION SLABS. CONTRACTOR TO DETERMINE EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION.

6. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS FOR FOOTINGS, BEAMS AND JOISTS, SIZES LOCATIONS ETC. AND SHALL NOTIFY THE ARCHITECT & ENGINEER OF ANY DISCREPANCIES.

7. DOWEL NEW INTO EXISTING SLABS W/#4 REBAR @ 24" O.C. AND FOOTINGS W/DOWELS TO MATCH NEW REINF. SIZE/LOCATION.

ENGINEERING NOTES

1. CONCRETE SLABS ON GRADE HAVE NOT BEEN DESIGNED BY THE STRUCTURAL ENGINEER.

2. THE VIBRATIONAL EFFECTS OF MECHANICAL EQUIPMENT HAVE NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER.

3. THE DESIGN, ADEQUACY AND SAFETY OF ERECTION, BRACING SHORING, TEMPORARY SUPPORTS ETC., IS THE SOLE RESPONSIBLITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING THE ENTIRE COURSE OF CONSTRUCTION. THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR FIELD INSPECTION/OBSERVATION OF THE ABOVE ITEMS.

4. ALLOWABLE SOILS PRESSURE TO BE A MINIMUM OF 1500 PSF UNLESS A SOILS REPORT IS PROVIDED. SOILS IN THE BUILDING AREA & 5 FEET BEYOND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION PER **2022** C.B.C.

SOILS REPORT BY:

JOB NO.

STRUCTURAL SYMBOLS

INDICATES SHEAR WALL TYPE & LENGTH. SEE FOUNDATION & OR FRAMING PLAN AND SHEAR WALL SCHEDULE FOR TYPE, SILL BOLTING, SHTG., ETC. NOTE: FOR SILL BOLTING AT EXISTING FOOTINGS USE "RED HEAD WEDGE ANCHORS" ICC# ER-1372 THE SAME SIZE & SPACING AS SILL BOLTING (MIN 7 1/2" EMBED).

INDICATES POST
MIN. POST SIZE/TYPE AS FOLLOWS U.N.O.:

BEAM SIZE	POST SIZE
4 X 14 & SMALLER	2-2X4 W/16d NAILS @ 12" O.C.
6 X 12 & SMALLER	3-2X4 W/16d NAILS @ 12" O.C.
4 X 16 & LARGER	4X4
6 X 14 & LARGER	4X6

SEE HOLDOWN DETAILS AND TYPICAL WALL FRAMING FOR FURTHER POST SIZE REQUIREMENTS.

POSTS ARE TO CONTINUE DOWN TO FOUNDATION.

FOUNDATION NOTES

GENERAL

1. SOIL BENEATH FOOTINGS AND SLABS SHALL BE COMPACTED PER **2022** C.B.C. (90%) RELATIVE COMPACTION MINIMUM.

2. IF A SOIL REPORT IS REQUIRED FOR THE PROJECT, THE SOILS ENGINEER SHALL INSPECT THE FOUNDATION PRIOR TO POURING OF CONCRETE AND SHALL VERIFY THE SOIL BEARING PRESSURE TO BE 1500 PSF MIN OR PER THE SOILS REPORT.

3. SLAB ON GRADE: 4 INCH. CONCRETE SLAB WITH #3 @ 18"O/C E.W. @ CENTER OF SLAB OVER 2 INCH. OF SAND OVER 10 MIL. VISQUEEN OVER 2 INCH. OF SAND OVER COMPACTED SOILS U.N.O.

4. NO TRENCHES OR EXCAVATIONS FIVE FEET IN DEPTH OR GREATER INTO WHICH A PERSON SHALL BE REQUIRED TO DESCEND SHALL BE MADE WITHOUT PROPER PERMIT.

5. THE MINIMUM BOLTING FOR SILL PLATES TO FOUNDATION SHALL BE AS FOLLOWS: 5/8" DIAMETER ANCHOR BOLTS WITH 3" X 3" X 0.229" PLATE WASHERS WITH 7" MIN EMBEDMENT IN CONCRETE WITH SPACING NO GREATER THAN 4 FEET O.C. NOR FURTHER THAN 12" FROM CORNERS (MIN 2 BOLTS PER PIECE). SEE THE FOUNDATION PLAN & SHEAR WALL SCHEDULE FOR FURTHER BOLTING REQUIREMENTS

6. PIPES OR DUCTS THAT EXCEED ONE THIRD THE SLAB OR CONC. WALL THICKNESS SHALL NOT BE PLACED IN STRUCTURAL CONC. UNLESS SPECIFICALLY DETAILED. SEE MECHANICAL AND/OR ELECTRICAL DRAWINGS FOR LOCATION OF SLEEVES, ACCESSORIES, ETC.

7. PIPES MAY PASS THRU STRUCTURAL CONC. IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN.

8. PROVIDE 3/4" CHAMFERS AT ALL EXPOSED CORNERS

9. SEE ARCHITECTURAL PLANS FOR MOLDS, GROOVES, ORNAMENTS CLIPS OR GROUNDS REQUIRED TO BE CAST IN CONCRETE, AND FOR LOCATIONS OF FLOOR FINISHES AND SLAB DEPRESSIONS.

10. LOCATION OF POUR JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.

CONCRETE

1. UNLESS OTHERWISE NOTED ON PLANS CONCRETE SHALL BE TYPE II WITH A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI IN 28 DAYS, WATER-CEMENT RATIO OF 0.45. CEMENT SHALL CONFORM TO A.S.T.M. CX-150 FINE & COURSE AGGREGATE SHALL CONFORM TO A.S.T.M. C33.

REINFORCING STEEL

1. REINFORCING STEEL, #3 AND #4 GRADE 40, #5 AND LARGER GRADE 60 PER A.S.T.M. A615.

2. LOW HYDROGEN WELDING RODS SHALL BE USED FOR ALL WELDING OF REINFORCING BARS.

3. BARS NOTED AS "CONT "TYPICAL WALL REINFORCING AND VERTICAL COLUMN REINFORCING SHALL HAVE A MINIMUM SPLICE OF 50 BAR DIAMETERS LAP IN MASONRY OR 40 BAR DIAMETERS MINIMUM IN CONCRETE..

4. REINFORCING SHALL BE SPLICED ONLY AS SHOWN OR NOTED. OTHER SPLICES SHALL BE APPROVED BY THE STRUCURAL ENGINEER.

5. SPLICES IN ADJACENT HORIZONTAL WALL REINFORCING BARS SHALL BE STAGGERED 4 FEET UNLESS OTHER WISE NOTED.

6. PROVIDE DOWELS IN FOOTINGS AND/OR GRADE BEAMS THE SAME SIZE AND NUMBER AS VERTICAL WALL OR COLUMN REINFORCING. DOWELS SHALL HAVE A MINIMUM PROJECTION EQUAL TO STANDARD LAP SPLICE UNLESS OTHERWISE NOTED.

7. ALL REINFORCING, ANCHOR BOLTS, AND OTHER INSERTS SHALL BE SECURED IN PLACE PRIOR TO PLACMENT OF CONCRETE OR GROUTING OF MASONRY.

8. PROVIDE THE FOLLOWING MINIMUM PROTECTIVE COVERING OF CONCRETE:

BELOW GRADE (UNFORMED)	3" CLEAR
BELOW GRADE (FORMED)	2" CLEAR
WALLS	1" CLEAR
COLUMNS	1.5"CLEAR
BEAMS AND GIRDERS	1.5"CLEAR
STRUCTURAL SLAB (ABOVE GRADE)	3/4"CLEAR

9. NUMBER 5 OR LARGER REINFORCING BARS SHALL NOT BE RE-BENT WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

FRAMING NOTES

FRAMING SHALL COMPLY WITH CHAPTER 23 OF THE **2022** CBC

FRAMING-GENERAL

1. USE SIMPSON U-HANGERS ON ALL JOIST/BEAM/BEAM CONNECTIONS UNLESS NOTED ON PLANS.

2. ALL POSTS SHALL HAVE SIMPSON "PC" CONNECTORS AT TOP AND SIMPSON "BC" OR "BCO" CONNECTORS AT BASES UNLESS OTHERWISE NOTED ON PLANS.

3. ALL CONNECTING HARDWARE, JOIST HANGERS, TIE STRAPS ETC. SHALL BE SIMPSON "STONG-TIE" UNLESS OTHERWISE NOTED OR SHOWN ON PLANS.

FRAMING-WALL

1. SIZE, SPACING & HEIGHT LIMITS FOR WOOD STUDS ARE AS FOLLOWS (UNLESS OTHERWISE NOTED ON PLANS):
2X4 @ 16"OC (BEARING WALL) SUPPORTING A MAXIMUM OF ONE FLOOR AND ONE ROOF SHALL HAVE A MAXIMUM HEIGHT OF 10 FEET
2X4 @ 16"OC (NON-BEARING WALL) SHALL HAVE A MAXIMUM HEIGHT OF 14 FEET
2X6 @ 16"OC (BEARING WALL) SUPPORTING A MAXIMUM OF TWO FLOORS AND A ROOF SHALL HAVE A MAXIMUM HEIGHT OF 10 FEET.
2X6 @ 16"OC (NON-BEARING WALL) MAXIMUM HEIGHT IS 20 FEET

2. RAKE WALLS AJDACENT TO SLOPED CEILINGS SHALL BE BALLOON FRAMED. DOUBLE TOP PLATES SHALL ALWAYS BE SUPPPORTED BY A ROOF OR CEILING DIAPHRAM.

3. SHEAR WALL PANELS MUST BE CONTINUOUS TO THE TOP PLATE AT ROOF FRAMING. SHEATHING SHALL HAVE ALL EDGES BLOCKED & THE APPROPRIATE SHEAR TRANSFER THRU CEILING OR SOFFIT FRAMING.

4. BORING AND NOTCHING OF WALL STUDS SHALL BE PER **2022** C.B.C. (2308.5.9 & 2308.5.10)
NOTCHING MAXIMIUM: 25% OF WIDTH ON BEARING WALLS
40% OF WIDTH ON NON-BEARING WALLS
BORING MAXIMUM: 40% OF WIDTH ON BEARING WALLS
60% OF WIDTH ON NON-BEARING WALLS.
NOTE: A MIN 5/8"CLEARANCE FROM EDGE OF STUD TO HOLE SHALL BE PROVIDED.

5. DOUBLE 2X TOP PLATE SHALL BE LAPPED 48" AT ALL SPLICES AND SHALL OVERLAP AT CORNERS.

6. WALL BRACING SHALL BE PROVIDED PER **2022** C.B.C. (2308.6.1) PROVIDE 1X6 LET-IN BRACING (@ APPROX. 45 DEGREES) EVERY 25' IN ALL STUD WALL NOT SHEATHED. BRACES TO RUN CONTINUOUS FROM TOP PLATE TO SILL PLATE.

7. ALL PLUMBING WALL SHALL BE 2X6 STUDS @ 16" O/C (MIN)

FRAMING-FLOOR

1. FLOOR SHEATHING (MIN) 3/4" STRUCTURAL I T & G PLYWOOD PANEL INDEX NO. 32/16 WITH EXTERIOR GLUE. USE 10d NAILS AT 6"OC AT ALL EDGES, BOUNDARIES, SHEARWALLS & 10"OC FIELD. NO BLOCKING IS REQUIRED UNLESS NOTED ON PLAN. ALL EDGES BLOCKED AT DECKS.

2. PROVIDE DOUBLE FLOOR JOISTS UNDER ALL PARALLEL NON-BEARING PARTITIONS.

3. PROVIDE CONTINUOUS BLOCKING BETWEEN FLOOR JOISTS UNDER BEARING WALLS WHICH ARE PERPENDICULAR TO JOISTS.

4. FRAMING AROUND OPENINGS: TRIMMER AND HEADER JOISTS SHALL BE DOUBLED AND SUPPORTED BY HANGERS PER CODE (**2022** CBC 2308.7.6).

FRAMING-ROOF

1. ROOF SHEATHING (MIN) 1/2" STANDARD PLYWOOD PANEL INDEX NO. 24/0 WITH EXTERIOR GLUE. USE 8d NAILS AT 6"OC AT ALL EDGES, BOUNDARIES AND SHEAR WALLS & 12" OC FIELD. NO BLOCKING IS REQUIRED UNLESS NOTED ON PLAN.

2. FRAMING AROUND OPENINGS: TRIMMER AND HEADER JOISTS SHALL BE DOUBLED AND SUPPORTED BY HANGERS PER CODE.

FRAMING-CEILING PER **2022** C.B.C. TABLE 2308.7.1(2)

1. CEILING JOISTS SHALL BE 2X6 @16"O.C. (MAX SPAN=12'-10")

2. CEILING JOISTS SHALL BE 2X8 @16"O.C. (MAX SPAN=16'-3")

FRAMING-JOISTS/RAFTERS

1. BORING AND NOTCHING OF JOISTS SHALL BE AS FOLLOWS:
(2019 CBC 2308.7.4)
BORING-MAX. DIA. OF HOLE SHALL NOT EXCEED 1/3 OF DRESSED DEPTH OF JOIST WITH A MINIMUM EDGE CLEARANCE OF TWO INCHES. NOTCHING-MAX. DEPTH AT ENDS SHALL NOT EXCEED 1/4 OF DRESSED DEPTH. NO NOTCHING IS ALLOWED IN THE CENTER THIRD OF THE JOIST SPAN. NOTCHING IN OTHER LOCATIONS SHALL BE ON THE COMPRESSIVE SIDE WITH A MAX DEPTH OF 1/6 OF THE JOIST DEPTH.

2. WHERE THREE OR MORE (MULTI JOISTS) ARE USED THE JOISTS SHALL BE BOLTED TOGETHER WITH 1/2"DIA MACHINE BOLTS W/ WASHERS AT 24"OC STAGGERED. BOLTS SHALL BE RETIGHTENED PRIOR TO APPLYING FINISH MATERIALS.

3. JOISTS/RAFTERS SHALL LAP AT SPLICES A MIN. OF 4 INCHES WITH 3-16d NAILS OR USE SIMPSON ST 2115 @ 48 INCHES O.C.

4. CROSS BRIDGING OR 2X BLKG.SHALL BE PROVIDED @ 8'-0" O/C, MAX. FOR ALL JOISTS AND RAFTERS MORE THAN 8" IN DEPTH

5. 2X SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS OR RAFTERS AT ALL SUPPORTS.

FRAMING-BOLTING

1. ALL BOLTS BEARING ON WOOD SHALL HAVE WASHERS UNDER HEAD OR NUT. SEE SCHEDULE

2. ALL BOLTS SHALL BE RETIGHTENED, PRIOR TO APPLICATION OF PLYWOOD, PLASTER ETC.

3. HOLES FOR BOLTS SHALL BE BORED 1/32" TO 1/16" LARGER THAN NOMINAL BOLT DIAMETER.

LUMBER

1. ALL LUMBER SHALL BE DOUGLAS FIR LARCH OF THE FOLLOWING GRADES UNLESS OTHERWISE NOTED (MAX MOISTURE CONTENT SHALL NOT EXCEED 19% & GRADED IN ACCORDANCE WITH THE WEST COAST LUMBERMANS ASSOCIATION.)

REPETATIVE USE MEMBERS	
STUDS & PLATES	NO.2
JOISTS & RAFTERS	
2X4 TO 4X4 INCLUSIVE	NO.2
2X6 TO 3X16 INCLUSIVE	N0.2
SINGLE USE MEMBERS	
BEAMS	
4X	NO.2
6X OR LARGER	NO.1
POSTS & MULLIONS	
4X4 & SMALLER	NO.2
4X6 & LARGER	NO.2
6X6 & LARGER	NO.1
MISCELLANEOUS LUMBER	
BLOCKING,FURRING, ETC.	NO.3
DECKING & SHEATHING	
2X,3X,4X	COMM'L DEX.

2. ALL WOOD BEARING ON CONCRETE OR MASONRY IF LESS THAN 4 FEET FROM GRADE SHALL BE PRESSURE TREATED DOUG FIR.

3. GLUED-LAMINATED WOOD BEAMS SHALL BE DOUGLAS FIR COMB. 24F-V8(*) DF/DF (Fb=2400PSI, Fv=165 PSI, E=180,000 PSI) INDUSTRIAL APPEARANCE WITH EXTERIOR GLUE UNLESS OTHERWISE NOTED ON PLANS. A CERTIFICATE OF INSPECTION FOR EACH GLU-LAM BEAM FROM AN APPROVED TESTING AGENCY TO BE SUBMITTED AND APPROVED BY THE BUILDING DEPT. PRIOR TO ERECTION. [(*) USE V8 FOR CANT. BEAMS AND V4 FOR SIMPLE SPANS BEAMS]

4. ALL STRUCTURAL PLYWOOD SHALL BE IN ACCORDANCE WITH DOC P.S.1-07

NAILING SCHEDULE (2022 CBC TABLE 2304.10.1)

THIS NAILING IS TYPICAL UNLESS OTHERWISE NOTED NAILS SHALL BE BOX OR COMMON WIRE SPECIFICLY DETAILED CONNECTIONS SHALL BE NAILED WITH COMMON WIRE NAILS. DIAPHRAGM SHEATHING NAILS OR OTHER APPROVED SHEATHING CONNECTIONS SHALL BE DRIVEN SO THAT THEIR HEAD OR CROWN IS FLUSH WITH THE SURFACE OF THE SHEATHING.

JOISTS OR RAFTERS TO SIDES OR STUDS	
8 INCHES IN DEPTH OR LESS	3-16d
FOR EACH ADDITIONAL 4"DEPTH ADD	1-16d
JOISTS OR RAFTERS AT ALL BEARING	
TOE NAIL EACH SIDE	3-8d
STUDS TO BEARING-TOE NAILS EA. SIDE	2-8d
BLOCKING BETWEEN JOISTS/RAFTERS	
TO THE JOISTS/RAFTERS TOE NAILS EA SIDE	2-10d
FROM BLOCKING TO BEARING TOE NAILS EA SIDE	2-10d
BLOCKING BETWEEN STUDS	
AT EACH END-TOE NAILS	2-10d
END NAILS	2-16d
PROGRESSIVE BLOCKING	
RAFTER TO BLOCK & BLOCK TO CONT. NAILER	2-16d
MULTIPLE STUDS	
(STAGGER NAILS ON STUDS WIDER THAN 4")	6d@24"OC
RIBBON TO STUDS	
1X RIBBON	2-8d
2X RIBBON	2-16d
DOUBLE TOP PLATES	
LOWER PLATE TO STUD	2-16d
UPPER TO LOWER PLATE	16d@16"OC
AT SPLICES (48"MIN) ON EACH SIDE	
OF BUTT IN TOP PLATE	8-16d
UPPER TO LOWER PLATE	
AT INTERSECTIONS	8-16d

PLYWOOD NAILING(SEE DETAILS &/OR SCHEDULES
BUILT UP BEAMS ------------20d@32"OC T&B STAGGERED 2-20d @ END
1X6 LET-IN BRACES, EACH BEARING.---------------------------2-8d
(PRE-DRILL HOLES FOR NAILS)

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO STANDARD SPECIFICATION FOR STRUCTURAL STEEL FOR BRIDGES OR BUILDINGS A.S.T.M. A709 GRADE

2. WIDE FLANGE STEEL ("W" SHAPES) SHALL CONFORM TO A.S.T.M. A992

3. STEEL CHANNELS AND ANGLES SHALL CONFORM TO A.S.T.M. A36

4. STEEL PIPE COLUMNS SHALL CONFORM TO A.S.T.M. A53 GRADE B

5. STEEL TUBE SHAPED MEMBERS SHALL CONFORM TO A.S.T.M. A500 GRADE B

6. STEEL PLATES AND BARS SHALL CONFORM TO A.S.T.M. A36 U.N.O.

7. HIGH TENSILE BOLTS WHERE INDICATED ON THE PLANS OR DETAILS SHALL BE THE FRICTION TYPE AND THERE SHALL BE NO PAINT, OIL, LACQUER, OR GALVANIZING BETWEEN THE CONTACT SURFACES. HIGH TENSILE BOLTS SHALL CONFORM TO A.S.T.M. A325 OR A490

8. ALL BOLTS FOR STEEL MEMBERS SHALL CONFORM TO A.S.T.M. A-307 UNLESS OTHERWISE NOTED.

9. FABRICATION SHALL COMPLY WITH THE LATEST A.I.S.C. SPECS.

10. WHERE FINISH IS ATTACHED TO STRUCTURAL STEEL, PROVIDE HOLES FOR 1/2"ø WELDED STUDS AT 4 FEET O.C. FOR THE ATTACHMENT OF NAILERS. SEE ARHITECTURAL DRAWINGS FOR FINISHES.

11. BEAM CONNECTIONS SHALL COMPLY WITH "FRAMED BEAM CONNECTIONS" A.I.S.C. PART 4, TABLE 1, USING 3/4" DIA. A307 BOLTS (M.B.).

12. OPEN WEB JOISTS SHALL COMPLY WITH THE STANDARDS OF "THE STEEL JOIST INSTITUTE".

STRUCT. STEEL WELDING

1. WELDING SHALL BE DONE BY THE ELECTRIC SHIELDED ARC PROCESS AND SHALL COMPLY WITH A.W.S. SPECIFICATIONS FOR WELDING AND FABRICATION.

2. WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS WHO ARE APPROVED BY THE LOCAL AUTHORITY.

3. ALL FIELD WELDS SHALL HAVE CONTINUOUS INSPECTION PER **2022** CBC (1705A.2.5) UNLESS OTHERWISE NOTED.

4. ALL BUTT WELDS SHALL BE FULL PENETRATION U.N.O.

5. A CERTIFICATE OF FABRICATION FROM THE SHOP PERFORMING WELDING OR A REPORT FROM THE SPECIAL INSPECTOR MUST BE FURNISHED TO THE JOB INSPECTOR PRIOR TO FRAMING APPROVAL.

6. USE E7018 ELECTRODE W/201-# TOUGHNESS FACTOR.

GRADING NOTES

1. A GRADING PERMIT SHALL BE OBTAINED PRIOR TO ANY GRADING.

2. ALL FILL ONE FOOT & GREATER SHALL BE CERTIFIED AND TESTED AS TO RELATIVE COMPACTION PER **2022** C.B.C.

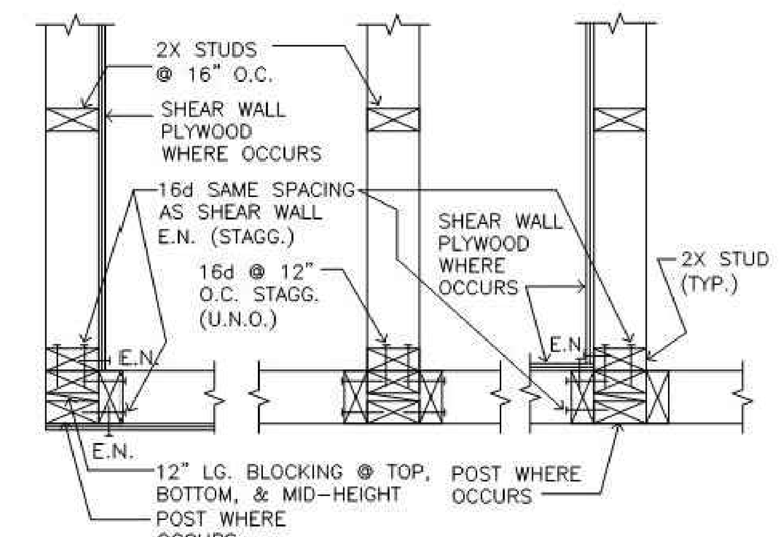
3. ALL FILL SHALL BE COMPACTED IN ACCORDANCE WITH CHAPTER 18 SECTION 1803 OF THE LATEST ADOPTED EDITION OF THE **2022** C.B.C.

4. ALL UTILITY TRENCH BACKFILLS SHALL BE IN ACCORDANCE WITH THE SOILS ENGINEERS RECOMMENDATIONS.

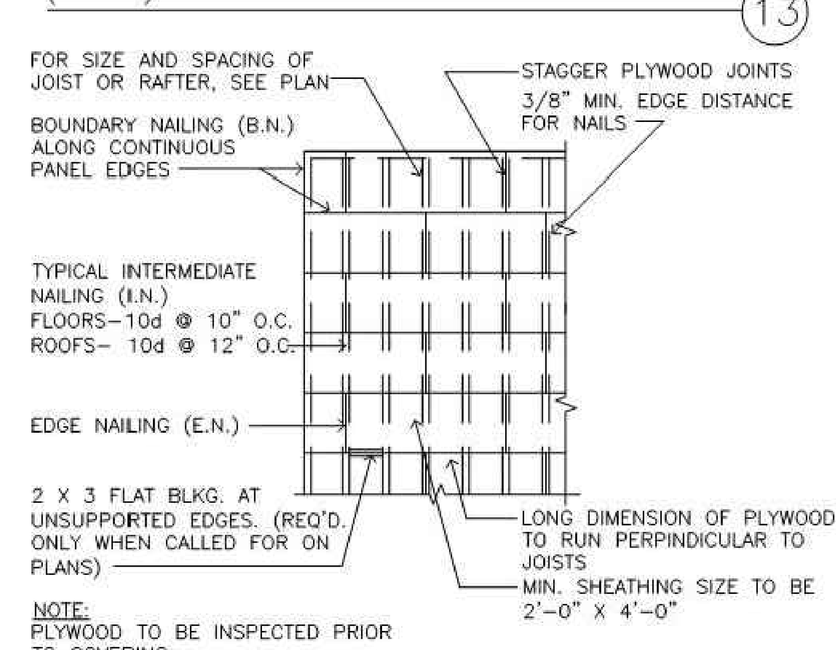
DRAINAGE NOTES

1. MINIMUM GRADIENTS ARE AS FOLLOWS: EARTH= 1% PAVING=.5%

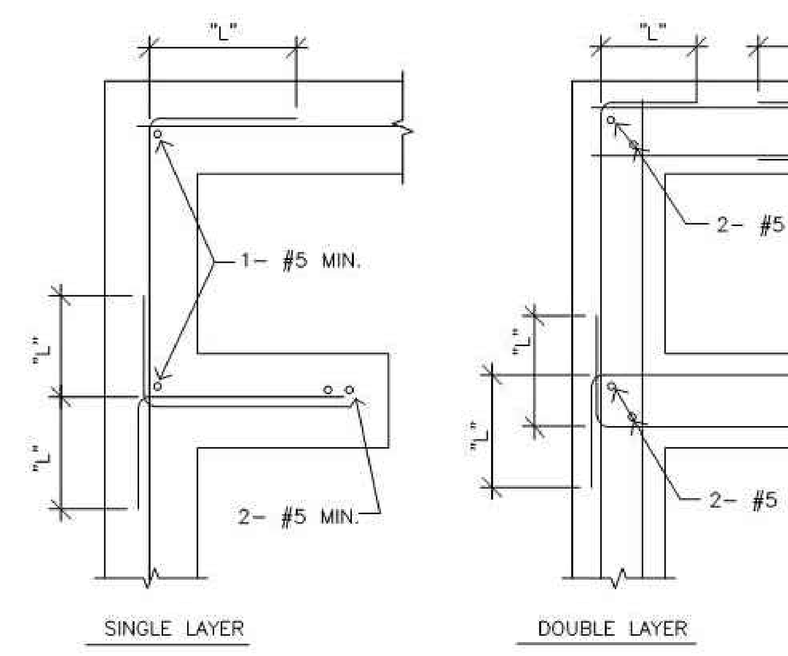
2. POSITIVE DRAINAGE AWAY FROM STRUCTURES SHALL BE AS FOLLOWS: 2% MIN TO 21% MAX SWALES TO BE 3 FEET MIN AWAY FROM STRUCTURES.



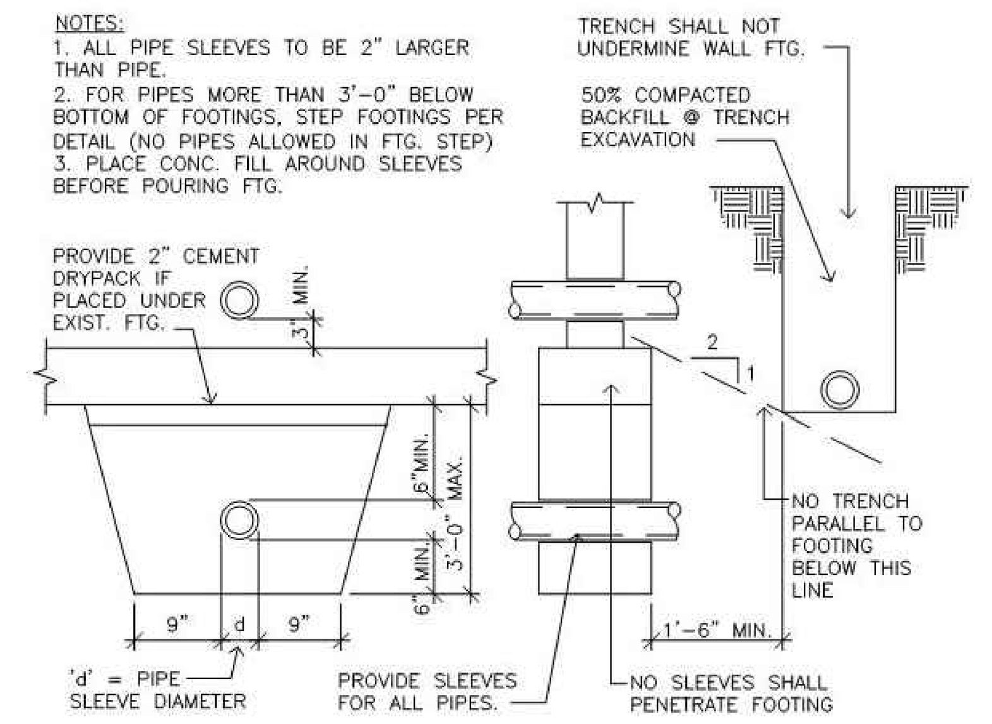
(TYP.) STUD WALL INTERSECTIONS (13)



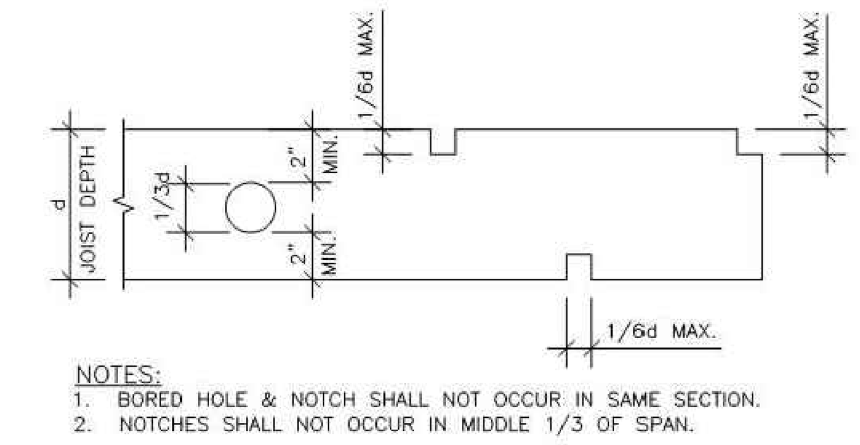
(TYP.) PLYWOOD LAYOUT (12)



(TYP.) REINFORCING (11)

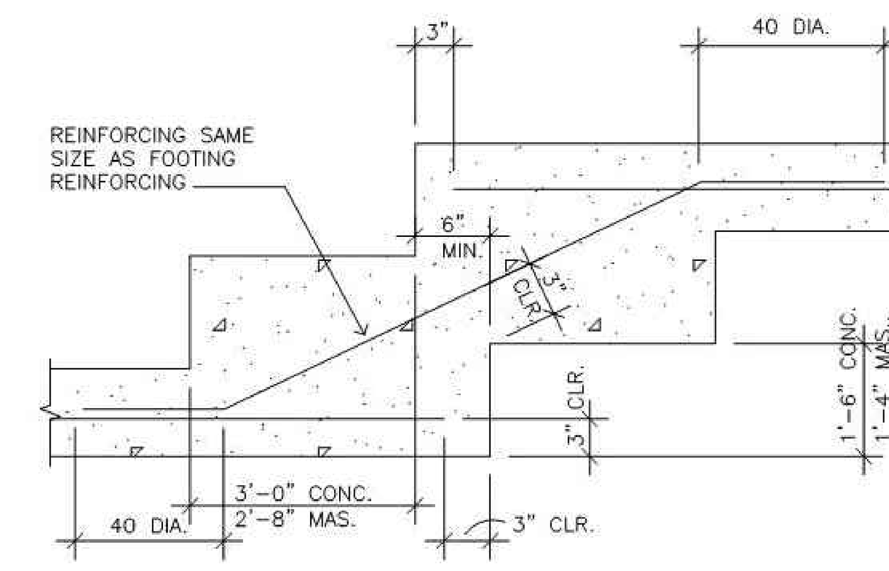


(TYP.) PIPE TRENCH (6)

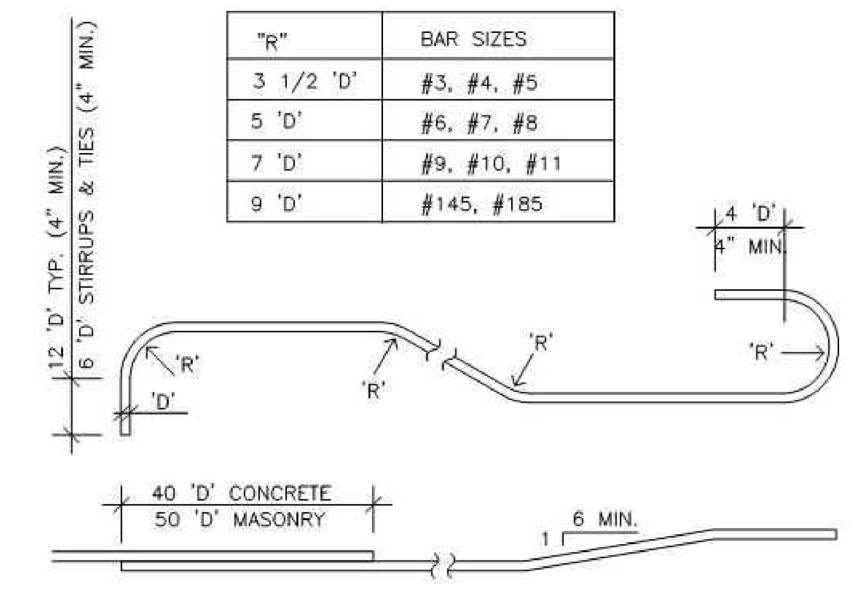


NOTES:
1. BORED HOLE & NOTCH SHALL NOT OCCUR IN SAME SECTION.
2. NOTCHES SHALL NOT OCCUR IN MIDDLE 1/3 OF SPAN.

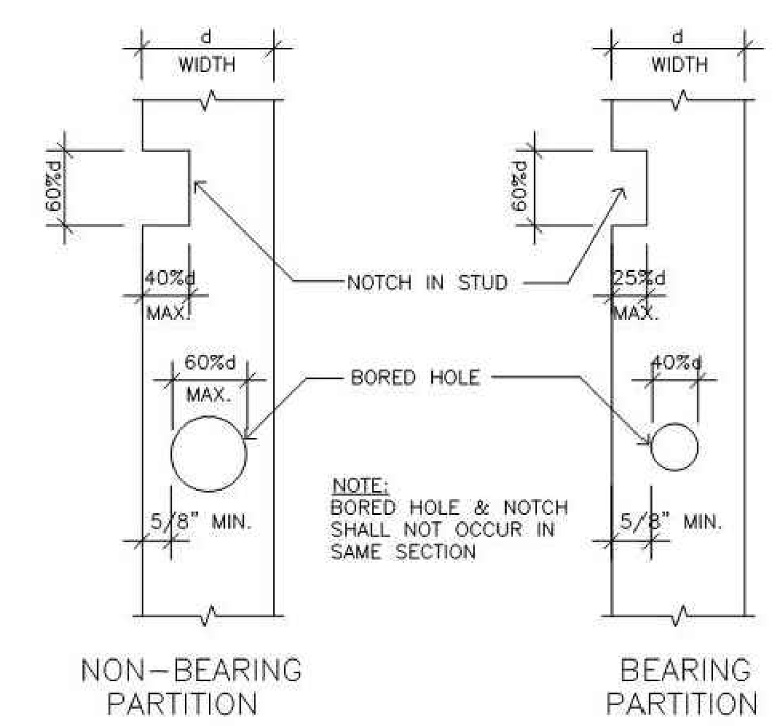
(TYP.) JOIST NOTCHING (3)



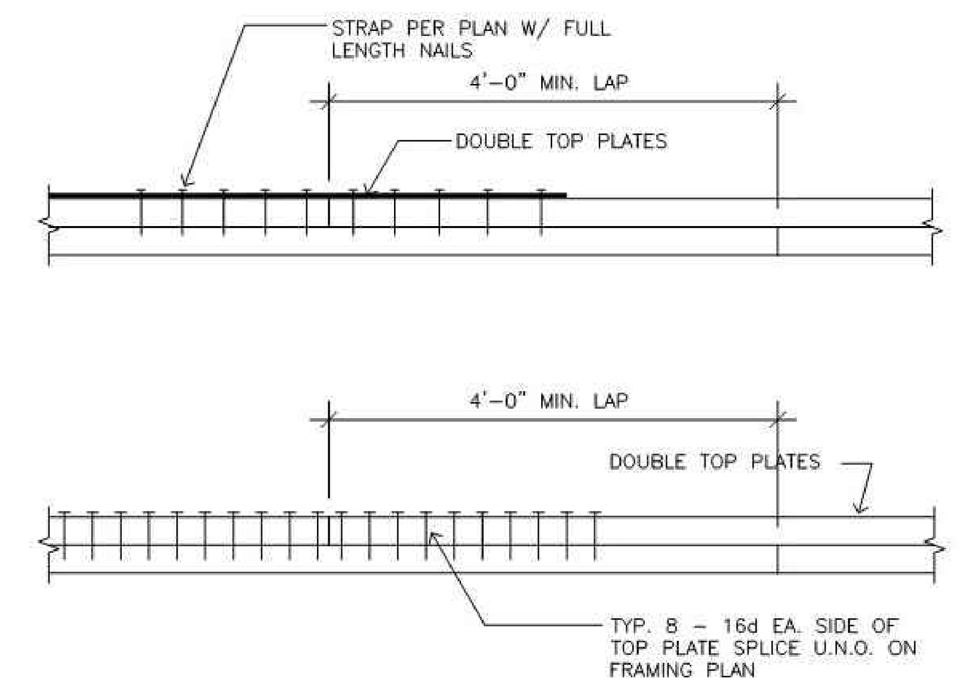
(TYP.) STEPPED FOOTING (10)



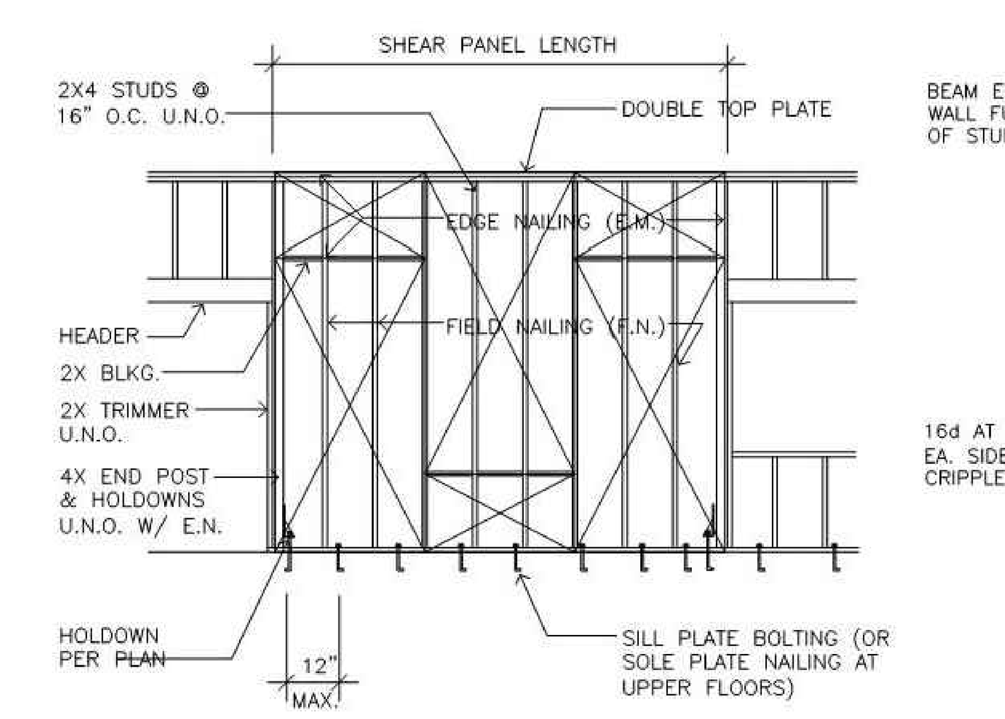
(TYP.) REINFORCING (5)



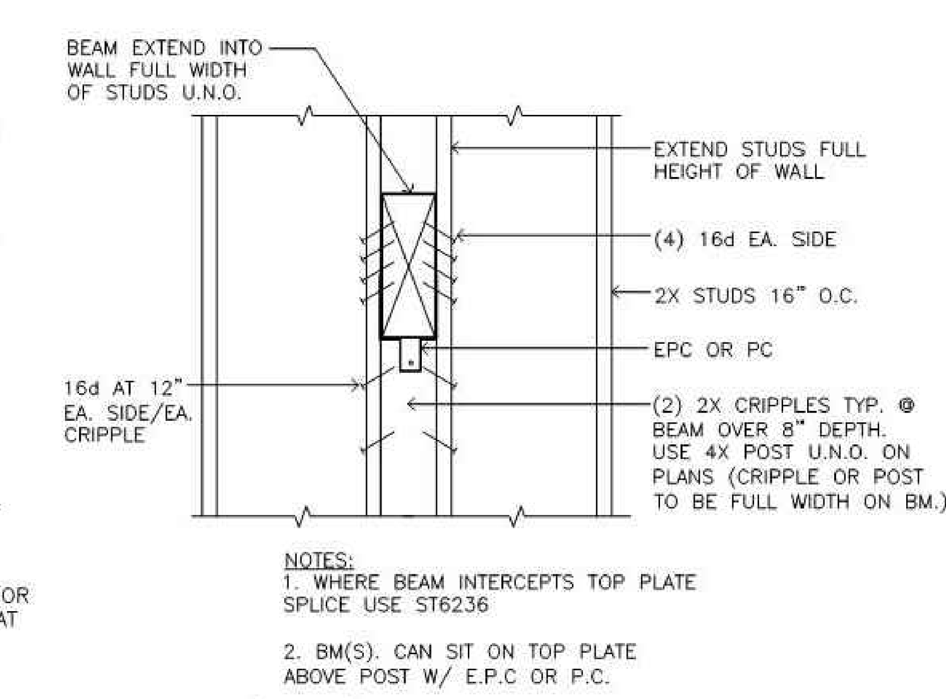
(TYP.) STUD NOTCHING (2)



(TYP.) PLATE SPLICE (9)

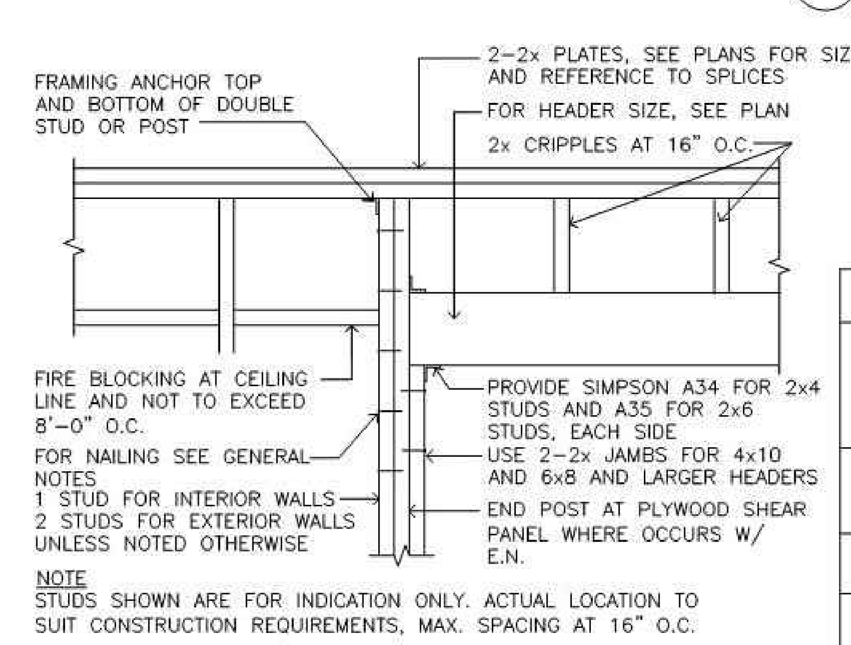


(TYP.) SHEAR PANEL ELEVATION (4)

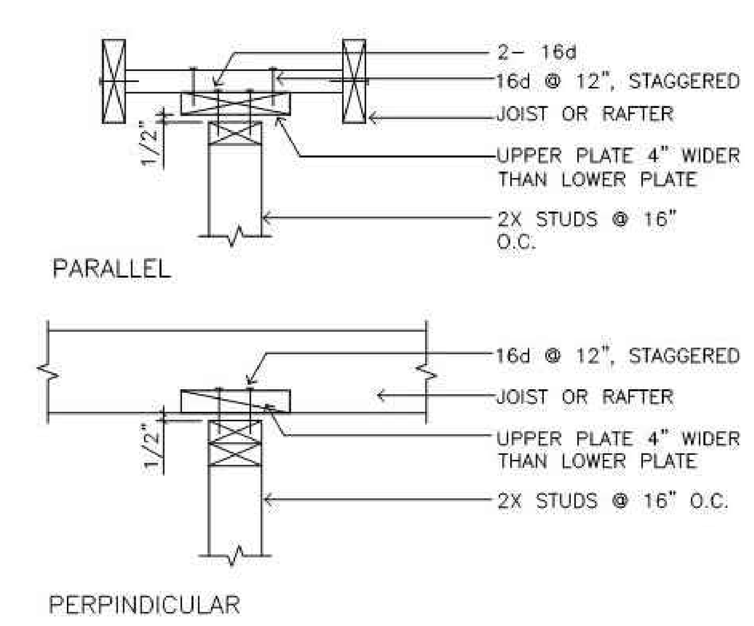


NOTES:
1. WHERE BEAM INTERCEPTS TOP PLATE SPLICE USE ST6236
2. BM(S). CAN SIT ON TOP PLATE ABOVE POST W/ E.P.C OR P.C.

(TYP.) BEAM TO WALL (1)



(TYP.) WALL FRAMING (8)



(TYP.) JOIST TO NON-BEARING WALL (7)

MARK	WALL TYPE	SILL BOLTING				
		ALLOWABLE SHEAR	SHEAR @ ONE SIDE OF WALL	SHEAR @ BOTH SIDES OF WALL	SILL NAILING 16d @ UPPER STORIES	A35 SPACING
8	7/8"STUCCO OVER PAPER BACKED LATH W/16 GA STAPLES AT 6"O.C. AT TOP & BOTTOM PLATES, EDGE OF SHEAR WALL AND ON FIELD (ICC REPORT No. ESR-2595) NOTE 4 AND 10 BELOW.	180 PLF	5/8"@48"O.C.	5/8"@ 24"O.C.	@ 8"O.C.	@ 32"O.C.
9	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 6"O.C. AT EDGES & 12" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 10, 11 & 12 BELOW	280 PLF	5/8"@32"O.C.	5/8"@16"O.C.	@ 6"O.C.	@ 24"O.C.
10	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 4"O.C. AT EDGES & 12" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 6, 10, 11, 12 & 13 BELOW	350 PLF	5/8"@24"O.C.	5/8"@12"O.C.	@ 4"O.C.	@ 16"O.C.
11	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 4"O.C. AT EDGES & 12" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BELOW	430 PLF	5/8"@16"O.C.	5/8"@8"O.C.	@ 4"O.C.	@ 16"O.C.
12	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 3" O.C. AT EDGES & 12" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BELOW	550 PLF	5/8"@16"O.C.	5/8"@8"O.C.	@ 3"O.C.	@ 12"O.C.
13	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 8d NAILS @ 2" O.C. AT EDGES & 12" O.C. FIELD (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BELOW	730 PLF	5/8"@16"O.C.	5/8"@8"O.C.	@ 2"O.C.	@ 8"O.C.
14	15/32" STRUCTURAL I PLYWD OR O.S.B. WITH 10d NAILS @ 2" O.C. AT EDGES & 12" O.C. FIELD O/ 3X STUDS (TABLE 4.3A SDPWS-2015) NOTE 1, 3, 5, 6, 8, 10, 11, 12 & 13 BLW	870 PLF	3/4"@16"O.C.	3/4"@8"O.C.	N/A	@ 8"O.C.

SHEAR WALL SCHEDULE **2021** I.B.C & **2022** C.B.C.

NOTES:

1. ALL EDGES OF PLYWOOD SHEARWALLS MUST BE BLOCKED WITH 2X SOLID BLOCKING FOR WALL TYPES 9 & 10, AND 3X SOLID BLOCKING FOR WALL TYPES 11, 12, 13, & 14.

2. WHERE SHEAR WALL SHEATHING IS TO BE APPLIED TO BOTH SIDES OF WALL, DOUBLE THE NUMBER OF BOLTS. (I.E. HALF THE O/C SPACING)

3. USE 3X PRESSURE TREATED DOUGLAS FIR SILL PLATES AT FOUNDATION (CONC. SLAB ON GRADE ONLY. NOT REQ'D @ RAISED FLOOR FOUNDATION)

4. PAPER BACKED SELF FURRING EXPANDED METAL LATH WITH ICC APPROVAL

5. FRAMING AT ADJOINING PANEL EDGES SHALL BE 3-INCH NOMINAL OR WIDER & NAILS SHALL BE STAGGERED.

6. WHERE PLYWOOD IS APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6 "O.C ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3- INCHES NOMINAL OR THICKER & NAILS ON EACH SIDE SHALL BE STAGGERED.

7. ALL CONTINUOUS EXTERIOR FOOTING TO HAVE 5/8" X 10" A.B.'S @ 48"O.C. UNLESS OTHERWISE NOTED ON PLANS.

8. AT 3x SILL PLATE USE (2) 20d BOX END NAILS AT STUD TO SILL PLATE CONNECTION IN LIEU OF (2) 16d NAILS PER LINE 8 OF TABLE 2304.9.1 (ALT: PROVIDE SIMP. A34 AT SILL TO STUD)

9. ALL INTERIOR NON BEARING FOOTINGS TO HAVE 7/32" SHOT PINS AT 32" O.C. & 48"O.C RESPECTIVELY. ICC# ESR-2269 (HILTI), OR ICC# ESR-1663 (RAMSET/RED-HEAD).

10. USE 3" X 3" X 0.229" PLATE WASHERS.

11. ALL PLYWOOD SHALL BE DOUGLAS FIR

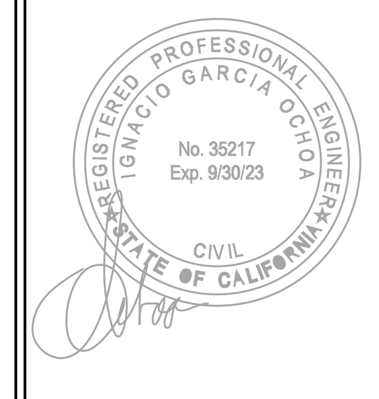
12. AT EXISTING FOOTINGS USE SIMPSON "SET-XP" EPOXY BOLTS PER SCHEDULED SILL BOLTING, EMBEDED 8", PER ICC# ESR-2508 WITH SPECIAL INSPECTION.

13. PERIODIC SPECIAL INSPECTION REQUIRED ON WOOD SHEAR WALLS WITH NAIL SPACING LESS THAN OR EQUAL TO 4" O.C.

14. GALVANIZED NAILS SHALL BE HOT DIPPED

PLANOS
DRAFTING
•Design Drawings
•Construction Drawings
GONZALO GUILLEN
PRINCIPAL
718 S. Hickory St.
Santa Ana, CA 92701
Tel. 714. 667.0892
Cell 714. 227.1189
Email: gplanos@sbcglobal.net

02-03-2025



GABRIEL & MARISA OROZCO
6625 GAYLORD ST
RIVERSIDE, CA 92505

SHEET

S1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 1 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

GENERAL INFORMATION					
01	Project Name	ADU			
02	Run Title	Title 24 Analysis			
03	Project Location	6625 GAYLORD ST.			
04	City	RIVERSIDE	05	Standards Version	2022
06	Zip code	92505	07	Software Version	EnergyPro 9.3
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	315
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	3
14	Addition Cond. Floor Area (ft^2)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft^2)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	1199	19	Glazing Percentage (%)	9.84%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

COMPLIANCE RESULTS	
01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 2 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

ENERGY DESIGN RATINGS	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	38.4	40.9	30.3			
Proposed Design	36.2	39.6	29.6	2.2	1.3	0.7

RESULT[3]: PASS

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 2.38 kWdc
- PV System resized to 2.38 kWdc (a factor of 2.381) to achieve 'Standard Design PV' PV scaling

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 3 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2-yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2-yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2-yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2-yr)	Margin (EDR1)	Margin (EDR2)
Space Heating	1.6	7.27	2.01	14.56	-0.41	-7.29
Space Cooling	1.16	24.02	1.04	24.09	0.12	-0.07
IAQ Ventilation	0.42	4.41	0.42	4.41	0	0
Water Heating	2.01	20.46	0.97	11.32	1.04	9.14
Self Utilization/Flexibility Credit			0	0	0	0
Efficiency Compliance Total	**5.19**	**56.16**	**4.44**	**54.38**	**0.75**	**1.78**
Photovoltaics	-2.27	-63.57	-2.27	-63.44		
Battery			0	0		
Flexibility			0			
Indoor Lighting	0.81	7.8	0.81	7.8		
Appl. & Cooking	4.68	30.38	4.67	30.26		
Plug Loads	4.57	46.67	4.57	46.67		
Outdoor Lighting	0.2	1.76	0.2	1.76		
TOTAL COMPLIANCE	**13.18**	**79.2**	**12.42**	**77.43**		

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 4 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

ENERGY USE INTENSITY	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Margin (kBtu/ft^2 - yr)	Margin Percentage
Gross EUI[1]	19.51	18.07	1.44	7.38
Net EUI[2]	7.95	6.51	1.44	18.11

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
2.38	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Cool roof
- Insulation below roof deck
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 5 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Verified Refrigerant Charge
- Fan Efficacy Watts/CFM
- Verified heat pump rated heating capacity
- Duct leakage testing
- Verified Duct Design

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
ADU	1199	1	3	1	0	1

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
FLOOR PLAN	Conditioned	ADU1	1199	9	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
SOUTHEAST WALL	FLOOR PLAN	R-15 Wall	135	Back	380.7	41	90
NORTHWEST WALL	FLOOR PLAN	R-15 Wall	315	Front	380.7	45	90
NORTHEAST WALL	FLOOR PLAN	R-15 Wall	45	Left	254.7	0	90
SOUTHWEST WALL	FLOOR PLAN	R-15 Wall	225	Right	254.7	32	90

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 6 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
R-30 Roof	FLOOR PLAN	R-30 Roof Attic	n/a	n/a	1199	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic FLOOR PLAN	Attic RoofFLOOR PLAN	Ventilated	4	0.2	0.85	Yes	Yes

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
WINDOWS	Window	SOUTHEAST WALL	Back	135			1	41	0.3	NFRC	0.23	NFRC	Bug Screen
WINDOWS 2	Window	NORTHWEST WALL	Front	315			1	45	0.3	NFRC	0.23	NFRC	Bug Screen
WINDOWS 3	Window	SOUTHWEST WALL	Right	225			1	32	0.3	NFRC	0.23	NFRC	Bug Screen

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Covered Slab	FLOOR PLAN	1199	141.2	none	0	80%	No

REGISTERED PROFESSIONAL ENGINEER RAYMUND MENG DUQUE No. M-27635 EXP. 06-30-25 MECHANICAL STATE OF CALIFORNIA

REVISIONS | BY

PERFECT DESIGN & MANAGEMENT INC.
Design & Consulting
Air-Conditioning, Plumbing, Fire Sprinkler System,
Electrical, Title 24 Energy Calculation.
2416 W. Valley Blvd.
Alhambra, CA 91803
E-Mail:perfectaaa2@gmail.com Tel: (626) 289-8808 Fax: (626) 289-4913

ADU
6625 GAYLORD ST.
RIVERSIDE, CA 92505

Date 1/29/2025
Scale
Drawn
Job # Y25-1127
Sheet 1
RESIDENTIAL T24 SHEET
Of 3 Sheets

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 7 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: 3 Coat Stucco
Attic RoofFLOOR PLAN	Attic Roofs	Wood Framed Ceiling	2x6 @ 24 in. O. C.	R-19	None / 0	0.055	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x6
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x6 @ 16 in. O. C.	R-30	None / None	0.032	Over Ceiling Joists: R-15.7 insul. Cavity / Frame: R-14.3 / 2x6 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 8 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	A. O. Smith	HPTS-50 2** (50 gal, AL13)	Outside	FLOOR PLAN	FLOOR PLAN

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
ADU1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	System Type	Number of Units	Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER	Zonally Controlled	Compressor Type	HERS Verification
Heat Pump System 1	Central split HP	1	HSPF	8.7	35400	22600	EERSEER	15	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 9 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Not Required	Yes	No	Yes	Yes

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
			Duct Ins. R-value		Duct Location		Surface Area				
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification
Air Distribution System 1	Unconditioned attic	Verified Design	See duct design	See duct design	Attic	Attic	2.46	0	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 10 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	65	0.35	Exhaust	No	n/a / n/a	No	Yes	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01-E**

Project Name: ADU **Calculation Date/Time:** 2025-01-29T14:38:04-08:00 **(Page 11 of 11)**

Calculation Description: Title 24 Analysis **Input File Name:** Y25-1127.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Raymond Zhong	Documentation Author Signature: Raymond Zhong
Company: Perfect Design	Signature Date: 01/29/2025
Address: 2416 W. Valley Boulevard	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Alhambra, CA 91803	Phone: 626-289-8808

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name:	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

REGISTERED PROFESSIONAL ENGINEER RAYMOND MENG ZHONG No. M27835 EXP. 06-30-25 MECHANICAL STATE OF CALIFORNIA

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type	Date
ADU	☑ Single Family ☐ Addition Alone ☐ Multi Family ☐ Existing+ Addition/Alteration	1/29/2025
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area**	**Addition**	**# of Units**
6625 GAYLORD ST. RIVERSIDE	CA Climate Zone 10	1,199	n/a	1

INSULATION

Construction Type	Cavity	Area (ft^2)	Special Features	Status
Roof Wood Framed Attic	R 30	1,199	Add+R-19.0 Cool Roof	New
Wall Wood Framed	R 15	1,153		New
Slab Unheated Slab-on-Grade	- no insulation	1,199	Perim = 141'	New

FENESTRATION Total Area: 118 Glazing Percentage: 9.8% New/Altered Average U-Factor: 0.30

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Rear (SE)	41.0	0.300	0.23	none	none	N/A	New
Front (NW)	45.0	0.300	0.23	none	none	N/A	New
Right (SW)	32.0	0.300	0.23	none	none	N/A	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Electric Heat Pump	8.70 HSPF	Split Heat Pump	15.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
ADU	Ducted	Ducted	Attic	6.0	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Heat Pump	50	3.80	Standard	New

EnergyPro 9.3 by EnergySoft User Number: 1919 ID: Y25-1127 Page 14 of 23

REGISTERED PROFESSIONAL ENGINEER RAYMOND MENG ZHONG No. M27835 EXP. 06-30-25 MECHANICAL STATE OF CALIFORNIA

REVISIONS | BY

PERFECT DESIGN & MANAGEMENT INC.
•Design & Consulting •Air-Conditioning, Plumbing, Fire Sprinkler System, Electrical, Title 24 Energy Calculation.
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E-Mail:perfectaaa2@gmail.com

ADU
6625 GAYLORD ST.
RIVERSIDE, CA 92505

Date 1/29/2025
Scale
Drawn
Job # Y25-1127
Sheet 2
RESIDENTIAL T24 SHEET
Of 3 Sheets

2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45.

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

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2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and weird as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testig is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ciii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet.
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

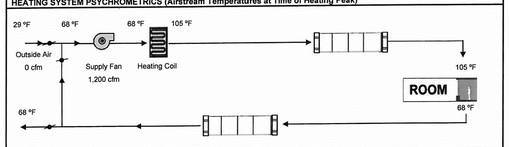
5/6/22

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

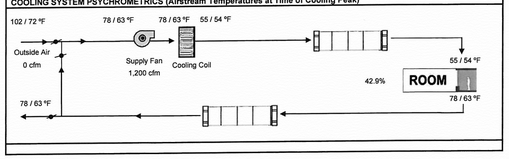
Project Name: ADU
Date: 1/29/2025
System Name: ADU
Floor Area: 1,199

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK CFM	COIL COOLING PEAK Sensible	COIL COOLING PEAK Latent	COIL HTG. PEAK CFM	COIL HTG. PEAK Sensible
Number of Systems	1						
Heating System							
Output per System	35,400	Total Room Loads	486	11,401	552	365	13,900
Total Output (Btuh)	35,400	Return Vented Lighting		0			
Output (Btuh/sqft)	29.5	Return Air Ducts		600			596
Cooling System		Return Fan		0			0
Output per System	34,800	Ventilation	0	0	0	0	0
Total Output (Btuh)	34,800	Supply Fan		0			0
Total Output (Tons)	2.9	Supply Air Ducts		600			596
Total Output (Btuh/sqft)	29.0						
Total Output (sqft/Ton)	413.4	TOTAL SYSTEM LOAD		12,601	552		15,092
Air System		HVAC EQUIPMENT SELECTION					
CFM per System	1,200						
Airflow (cfm)	1,200	CARRIER 25HBC536/*1ST CO,* 36HXC(3 TON)		25,947	5,691		23,946
Airflow (cfm/sqft)	1.00						
Airflow (cfm/Ton)	413.8						
Outside Air (%)	0.0%	Total Adjusted System Output (Adjusted for Peak Design conditions)		25,947	5,691		23,946
Outside Air (cfm/sqft)	0.00						
Note: values above given at ARI conditions		TIME OF SYSTEM PEAK		Aug 3 PM			Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



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REVISIONS | BY

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RIVERSIDE, CA 92505

REGISTERED PROFESSIONAL ENGINEER — RAYMOND MENG ZHONG — No. M 27635 — EXP. 06-30-25 — MECHANICAL — STATE OF CALIFORNIA

Date 1/29/2025
Scale
Drawn
Job # Y25-1127
Sheet 3
RESIDENTIAL T24 SHEET
Of 3 Sheets